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CHRONIC, BENIGN AND SMALL MALIGNANT ULCERATIVE LESIONS OF THE STOMACH: FACTORS HELPFUL IN THE DIFFERENTIAL DIAGNOSIS*

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With the realization that only one of every four gastric carcinomas is resectable when first seen at the clinic, and that half of the patients who have the condition are rejected for operation on completion of the examination,[5] it is obvious that the diagnosis of malignant gastric lesions is usually not difficult. I shall therefore consider here only those small circumscribed carcinomatous lesions that are more or less indistinguishable from chronic benign ulcer. Probably with better understanding of the nature, incidence and significance of these circumscribed lesions, further progress will continue to be made, so that increasingly more patients will be seen at a time when the lesion is localized and resectable.

Progress has been made to the point at which it is recognized that gastric carcinomas may frequently exist in the absence of cachexia, a palpable epigastric mass, achlorhydria, pyloric obstruction and anemia, and in the absence of lactic acid, blood, and of the bacillus of Oppler and Boas in the gastric content.[9] The profession, moveover, is becoming increasingly cognizant of the fact that early carcinomatous lesions of the stomach, in fact even those of considerable extent, present no characteristic train of symptoms, and that those symptoms traditionally described in the textbooks are actually the manifestations of the advanced lesion.

Admitting in the state of present knowledge, especially in the absence of a specific biologic test for cancer, that the carcinomatous transformation of a gastric ulcer may not be discernible short of histologic examination and that all criteria may fail in the individual case, surely progress has been made in the recognition of small carcinomatous lesions. To assume that the problem is an insoluble one is a defeatist attitude, and to ignore, or to discount too freely, certain symptoms and signs or their variable combinations in the presence of a gastric lesion implies carelessness, inexperience or prejudice, and such an attitude may seal the doom of the patient.

THE ORIGIN, OR PRECURSORS, OF GASTRIC CARCINOMA

Because of the important bearing of this aspect of the disease on diagnosis, prophylaxis and therapy, it seems appropriate to consider the origin, or the precursors, of cancer of the stomach. It is the universal conviction that cancer rarely if ever develops in normal, healthy gastric mucous membrane. For years there has been concrete evidence that cancer may arise in the borders of a chronic gastric ulcer and in adenomas and polyps, although the last mentioned are of relatively infrequent occurrence. Some pathologists, notably Konjetzny and his followers, have maintained for almost a quarter of a century that ulcers and carcinomas, particularly the latter, have their origin in chronic gastritis, or in adenomas and polyps which they regarded as usually being the result of gastritis. Konjetzny felt that ulcer as a cause of cancer was infrequent. About

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seven years ago Hurst advanced the plausible hypothesis that carcinoma may originate in all three lesions, carcinomas associated with the presence of free hydrochloric acid having had their origin in a pre-existing gastric ulcer, and those associated with achlorhydria having had their origin in a pre-existing chronic gastritis. In his opinion carcinomas originating in gastric ulcers constituted about 20 per cent of all carcinomas, those originating in chronic gastritis about 75 per cent, those in adenomas 4.5 per cent, and those in polyposis 0.5 per cent. Hurst contended that achlorhydria was not the result of carcinoma or of its extension but that it antedated the onset of cancer as a consequence of a pre-existing gastritis. This is a revolutionary theory, yet one consistent with certain clinical and pathologic observations. While we at the clinic are inclined to agree more with Hurst concerning the importance of ulceration as a precursor of carcinoma, our experience does not permit us to accept without many reservations his theory concerning chronic gastritis and achlorhydria in relation to such a large percentage of gastric carcinomas.

VARIETIES OF EARLY GASTRIC CARCINOMA

Early gastric carcinomas are characterized by small localized areas of infiltration or thickening of the gastric mucous membrane, by plaques, polypoid growths, and by ulceration. All but the last named variety are small tumefactions which consist of adenomatous, scirrhous or polypoid growths that have not undergone ulceration, and if so, to no appreciable extent. The last mentioned variety, which is the predominant form of early gastric carcinoma irrespective of size, consists of: (1) small malignant tumefactions undergoing gross or demonstrable ulceration and benign ulcers which have undoubtedly undergone more extensive malignant transformation which are designated as "ulcerating carcinomas;" and (2) chronic ulcers in the borders of which carcinomatous changes have taken place, designated as "carcinomatous ulcers."

From a roentgenologic standpoint Kirklin[8] classifies early carcinomas into four types: (1) small malignant or infiltrating growths without deep ulceration; (2) early prepyloric carcinomas; (3) small ulcerating carcinomas, and (4) malignant ulcers. The second is apparently an empirical classification, or one of convenience, because of the difficulty in distinguishing roentgenologically a lesion in this location from other lesions such as syphilis, hypertrophy of the pyloric muscle, hypertrophied rugae, and benign ulcer associated with regional spasm of the antral musculature.

While the small infiltrative or tumefactive lesions come in for some consideration, I shall confine my discussion chiefly to small ulcerating carcinomatous lesions and indicate in what way they may be distinguished from the commoner benign gastric ulcers.

DIFFERENTIAL DIAGNOSIS

I shall first discuss those noteworthy signs and symptoms which to date my colleagues and I[9] have found helpful, or even decisive, in distinguishing between benign and carcinomatous ulcerating lesions. Our observations are based on the clinical, roentgenologic, and pathologic study of successive series of resected and histologically verified benign, and small malignant specimens.

In view of the routine methods of diagnostic procedure it seems logical to consider at the outset the significant features elicited by the anamnesis, physical examination and gastric analysis; however, I shall first discuss the data afforded by the roentgenologic examination as these usually supply, among other important details, the fundamentally essential information concerning the situation of the lesion, whether gastric or duodenal, and the approximate extent of the same.

Significance of Roentgenologic Findings.—Of first concern is the size of the crater, so faithfully depicted by the niche. I have previously shown that one in about four resectable carcinomas are within the range of size of benign ulcers.[4] This observation has recently been verified by Comfort and Butsch in a study of 135 carcinomas, within the range of size of ulcers, and 513 benign ulcers, resected at the clinic during a period of five years. Thus we have the reassuring fact that on the basis of incidence alone, a resectable lesion has approximately four chances out of five of being benign before any other data have been accumulated. However, on the basis of the ob-

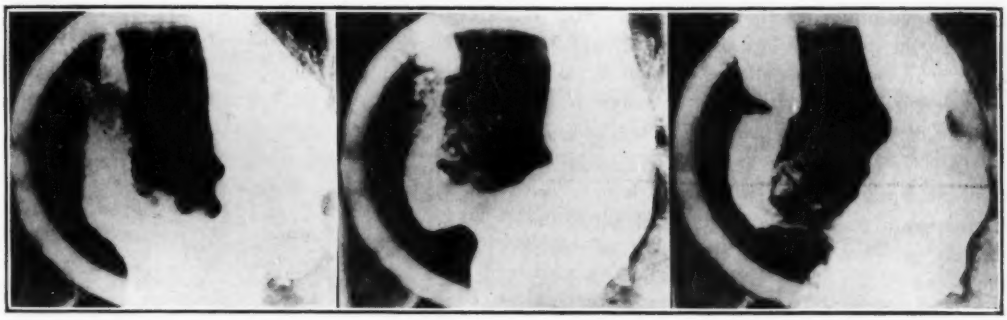

Fig. 1. Small ulcerating carcinoma, not more than 2 cm. in diameter, on lesser curvature of stomach below incisura angularis: A married woman, aged 66 years, about 8 weeks prior to admission had cramp-like pains about five hours after each meal and at about 5 a. m.; partial relief was obtained from alkalies, milk, and hot moist applications. There was no nausea, vomiting, loss of weight or impairment of appetite. Restriction of diet to milk and cream brought marked relief; no epigastric tenderness or tumefaction. Hemoglobin 86 per cent; free hydrochloric acid 32 clinical units. Operation (April 8, 1936); grade 3 ulcerated carcinoma (2 by 1.5 by 1 cm.).

servations of Alvarez and MacCarty, the roentgenologist considers any lesion with a niche more than 3 cm. in diameter as, in all probability, being carcinomatous although there are frequent exceptions to the rule, as pointed out by various writers including myself. Unfortunately, however, the presence of a small niche does not exclude carcinoma, for in the past fourteen years, according to MacCarty, 6 per cent of all carcinomas resected have been found in chronic ulcers less than 2.5 cm. in diameter. This observation is of interest inasmuch as 5 per cent of lesions unequivocally diagnosed in recent years as benign ulcer by our roentgenologists were actually carcinomatous according to data compiled by Comfort and Butsch. By way of comparison, the average diameter of all gastric cancers resected at the clinic is 6.1 cm. That the roentgenologist, in the interest of the patient's welfare, "leans over backward" to regard any irregularity of a lesion as indicating its actual or probable malignant nature, is evidenced by the latest statis-

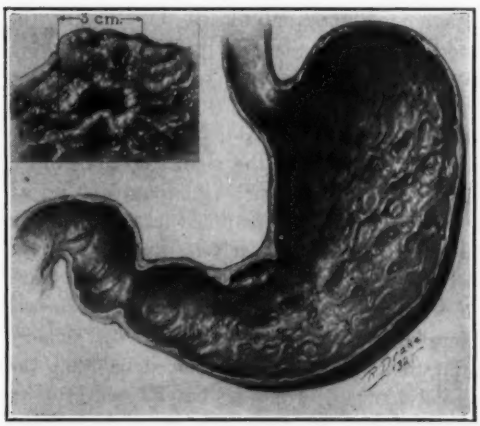

Fig. 2. Left, fluoroscopic image with palpating hand exerting pressure, demonstrating a small ulcerating carcinoma of the lesser curvature of the stomach; right, same stomach, showing the lesion 3 cm. in diameter.

tical study indicating that in 26 per cent of cases so regarded the lesions were actually benign. In other words, the odds favor a pathologic diagnosis of carcinoma three to one if the roentgenologic diagnosis is carcinoma.

Other roentgenologic features characteristic of most benign or carcinomatous lesions are summarized in table 1. Undoubtedly the greatest progress has been made in the detection of small ulcerating carcinomas on the basis of the meniscus sign-complex. This sign, according to Kirklin,[7] is practically pathognomonic of carcinoma (figs. 1 and 2). In my judgment the roentgenologic examination, when carried out by a well-trained and experienced roentgenologist, is the most valuable single diagnostic agent.

Gastroscopy.—Schindler claims that gastroscopy is of great value for the differentiation of benign and malignant lesions, stating that "the latter do not have the sharp edge and the yellow floor of the benign ulcer." He must have had reference to the more advanced malignant lesions because the small or early type of lesion under consideration usually cannot be distinguished from chronic ulcer by the surgeon or pathologist, even on close inspection of the resected specimen. It is only by histologic examination that successful differential diagnosis is possible.

Significance of Symptoms.—Contrary to the opinion of some observers, the majority of benign gastric ulcers are accompanied by the classic syndrome of ulcer, although not to the same degree or with the same frequency that characterizes duodenal ulcer. The longer the history, the greater is the chance (seven times) that the lesion is benign, especially when the symptoms have been present for from ten to twenty-five years (fig. 3). It was readily apparent, however, that the signs and symptoms, and their duration, which characterize "run of the mill" carcinomas are much less in evidence when dealing with the early or small malignant ulcerative lesions. In a critical study ten years ago of the histories of eighty patients who had undergone gastric resection for small malignant lesions (carcinomatous ulcers and ulcerating carcinomas), I noted that 52 per cent of them presented symptoms characteristic of benign ulcer, with an average duration of such symptoms of eleven years; moreover, 82 per cent of these had free hydrochloric acid in the gastric content. Subsequent study of a larger series indicated that at least three-fourths of the ulcerating carcinomas have their origin in a gastric ulcer, if the syndrome and the presence of hydrochloric acid are any criteria. While a typical history of ulcer favors benign ulcer it does not exclude malignancy; contrariwise, an irregular or nonulcer type of history does not exclude benignancy. Neither is a change in symptoms any criterion of malignant transformation, and one would not expect it to be when such transformation is of a microscopic or even slightly gross nature. Such change in symptoms is usually due to some complicating factor, such as obstruction, penetration, perforation, perigastric adhesions, hourglass stomach, and so forth (fig. 4). Thus it is seen that the symptoms themselves are only of secondary value in the differential diagnosis, although they are frequently of importance when taken in conjunction with other findings.

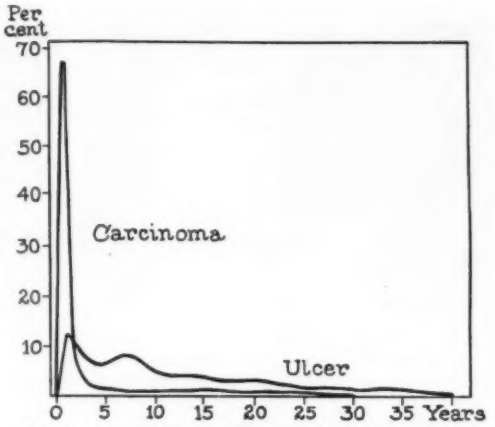

Fig. 3. Percentage distributions, showing the marked difference in the duration of symptoms of patients who have ulcer, and of patients who have cancer, of the stomach.

Significance of Sex, Age, and Time of Onset.—Our studies have shown that sex does not aid materially in determining whether the lesion is benign or malignant. The difference in the average age of patients with small carcinomas (52.9 years) and with ulcers (48.5 years) was too small to be of any value. Com-

Fig. 4. Perforated ulcer on posterior wall of stomach near lesser curvature above incisura angularis: A man, aged 42 years, entered clinic April 23, 1936. In 1932, following emotional stress and irregular habits, he experienced severe pyrosis two hours after eating, which was relieved by food; he had nausea and apparent melena. He recovered after three months on a diet-alkali regimen. He had a recurrence in February, 1936. Roentgenoscopic examination disclosed gastric ulcer. He was treated with 24 injections of histidine preparation and became free of symptoms after one month. There was no roentgenologic evidence of ulcer in March, 1936. One month later he began to have diffuse gnawing upper and midabdominal distress, bearing no relation to alimentation; this was associated with belching but there was no pyrosis and food gave no relief as heretofore. His home physician was suspicious of carcinoma; there was localized tenderness in the midepigastric area. Hemoglobin, 98 per cent; free hydrochloric acid (Ewald), 42 units; glycosuria. Operation: chronic ulcer (2 by 1.5 cm.) which had perforated into capsule of pancreas. Gastric resection.

fort and Butsch, however, found that, although the incidence of ulcer was greater than cancer in all decades, ulcer was twenty times more prevalent than cancer in the third decade of life. By and large, advanced age and short duration of symptoms characterize many cases of carcinoma of all types and sizes; however, inasmuch as many pathologically verified benign gastric ulcers first presented symptoms when the patients were in middle life, on an average of nine years later than duodenal ulcer, the factor of age and time of onset per se is of somewhat limited differential diagnostic value. I[4] have also previously shown that 8 per cent of patients with cancer are less than forty years of age, and actuaries, notably Dublin, Jimenis and Marks, have recently stated that: "while it is true that the mortality from cancer of the stomach increases definitely with age, a surprisingly large number of cases have their onset of malignancy in the thirties."

Significance of Gastric Analysis.—Generally speaking the extremes of gastric acidity, that is the absence of hydrocholoric acid or marked subacidity on one hand and high acid concentration (hyperacidity) on the other, are of relative value in distinguishing benign from malignant lesions. The mean values are of less significance. In recent years some authorities have also stressed the importance of secretory volume, and with considerable justification. Some allowance must be made for sex and age, as secretory function varies both in health and disease under these circumstances. I would be reluctant to look upon a lesion as benign, however small, in the presence of consistent achlorhydria, especially after stimulation with histamine, even though one occasionally sees instances of active, latent, or healed benign gastric ulcer, or recurrent or anastomotic ulcers, in the presence of achlorhydria. My experience would direct me first to exclude carcinoma, and then, in order of frequency, syphilis, tuberculosis and patchy gastritis. On the other hand, a concentration of hydrochloric acid of 60 or more clinical units after an ordinary Ewald meal as a stimulus would make the diagnosis of carcinoma unlikely. I have already pointed out the high incidence of free hydrochloric acid in three-fourths of the cases of small carcinomatous lesions, strongly suggesting that such lesions have their origin in pre-existing benign ulcers, when one takes into consideration the nature of the symptoms and duration of the complaint. For inoperable lesions or those of large size the reverse is true inasmuch as achlorhydria or hypochlorhydria is the rule and the characteristic symptoms of ulcer are infrequent.

There are apparently two varieties of small carcinomas: carcinomatous ulcers, which are invariably associated with adequate amounts of acid and secretion, and ulcerating carcinomas, which may or may not be associated with free hydrochloric acid. Figure 5 is illustrative of the latter and depicts a small lesion which was associated with the presence of achlorhydria

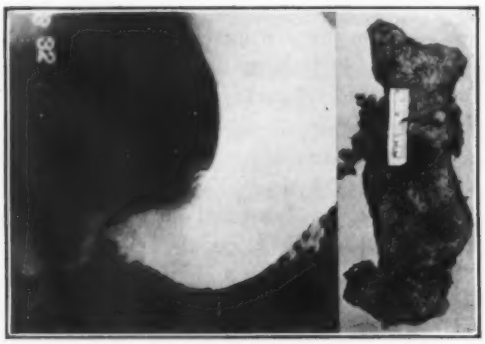

Fig. 5. Meniscus sign-complex (not shown on film) of small ulcerating carcinoma on posterior wall, lesser curvature, below angle: The patient's (a man, aged 73 years) symptoms began four months previously; he lost 17 pounds (7.7 kg.). Hemoglobin, 90 per cent; achlorhydria (fractional meal). Pathologic report on tissue removed; adenocarcinoma, grade 2 (2.5 by 2 cm. by 7 mm.).

even in the earliest stage of the disease. The lesion in this instance undoubtedly is representative of an adenocarcinoma which has ulcerated and which is associated with chronic antral or pan-gastritis, or it might have had its origin in such a process. According to our most recent studies, the recovery of a gastric content greater than 200 c. c. was five times as frequent in cases of ulcer as in those of cancer. It was, however, more an indication of the low site of the lesion (juxtapyloric) rather than that cancer or ulcer was present. Remnants of food in the gastric content were approximately the same in both instances. The presence of occult blood did not favor either lesion. In my judgment the combination of achlorhydria and pyloric obstruction, or gross retention, is highly characteristic of carcinoma. When the roentgenologic examination, which is usually made independent of the clinical examination, results in a diagnosis of duodenal ulcer with obstruction (or of a lesion at the outlet with obstruction, a diagnosis which implies the absence of a demonstrable filling defect), the clinician should regard the lesion as malignant until it is histologically proved otherwise. The condition in the majority of such cases, in my experience, is due to a small obstructing carcinoma at or just above the pylorus.

Significance of the Results of Treatment.—Regardless of opinions to the contrary, the results of properly carried out medical treatment and observation are only less decisive in differentiating a benign from a circumscribed malignant process than surgical removal and histologic examination of the excised lesion. I say this with full cognizance of the fact that some chronically sclerosed, indurated or chronically perforated lesions will not heal, so that there is a persistence of the niche in whole or in part, and that on the other hand some ulcers with early carcinomatous changes in the borders may temporarily disappear under treatment. As a matter of fact, however, I have never seen complete disappearance of all symptoms and signs when a lesion was malignant. In some cases the signs may disappear but the symptoms may persist, in whole or in part; or, what is more frequently the case, the symptoms may temporarily disappear but the signs may persist or become more evident.

Proper medical treatment presupposes thoroughness and repeated obesrvation, roentgenologic and otherwise, at intervals of two to three months for the first year. Small ulcerating carcinomas usually change little in appearance; in fact they may get larger during treatment; or, if the crater is reduced, the symptoms or other signs, especially occult bleeding, or both, may persist or increase. The apparently benign ulcers which are intractable to treatment should be submitted to operation, not only in the best ultimate interests of the patient, but in order to determine the true nature of the lesion. Haphazard or negligent treatment of any gastric lesion is unpardonable, and if adequate treatment is not possible or acceptable, operation should be advised unless the surgical risk, in the opinion of the physician, is much greater than the hazard of harboring the disease, which is unfortunately too often the case.

COMMENT

Much that I have stated in the foregoing paragraphs may appear contradictory because there are so many exceptions to the rules. Nevertheless, a careful summation and appraisal of all the facts in a given case may aid in, or make possible, the differentiation of a carcinomatous ulcerative process and a benign one. In table 2 are listed the more significant symptoms and signs useful in such differentia-

tion. This article will have served a useful purpose if only the physicians will not regard lightly any gastric lesion, however small, and will take added precautions under the circumstances which I have described in order that the health and life of his patient will be properly safeguarded.

Table 1

ROENTGENOLOGIC CRITERIA FOR DISTINGUISHING BETWEEN BENIGN AND MALIGNANT ULCER

BENIGN ULCER	MALIGNANT ULCER
Niche usually less than 2 cm. in diameter	A niche exceeding 2.5 cm. in diameter strongly suggests malignancy
Niche regularly hemispherical, dense, and margins sharply defined	Niche often conical or irregular, faint, and margins poorly defined
Ulcer on lesser curvature, not near pylorus	Ulcer on greater curvature invariably malignant; ulcer on posterior wall likely to be malignant; ulcer near pylorus open to suspicion
Gastric peristalsis likely to be active	Gastric peristalsis often diminished or absent
Spastic manifestations common: narrowing, curling of antrum, hourglass contraction	Spastic manifestations rare
Rugae commonly accentuated and converge toward niche	Rugae adjacent to niche often faintly marked or effaced
Pylorus spastic	Pylorus gaping
Localized tenderness over ulcer	Ulcer seldom tender to pressure

Table 2

DIFFERENTIAL DIAGNOSTIC FEATURES OF CARCINOMATOUS AND BENIGN GASTRIC ULCER

Symptoms and Signs	Favors malignancy	Favors benignancy	Degree (basis of 1 to 4)
Long duration of symptoms (10 years or more)		+	3
Age, 30 years or less, and free HCl, 40 units or more		+	3+
Late onset and elderly patient	+		2+
Irregular syndrome	+		2
Achlorhydria and obstruction	+		3+
Meniscus sign-complex	+		4
Large niche	+		3
Irregular outline of niche	+		3
Location: prepyloric, greater curvature, posterior wall	+		2+
Local tenderness (on roentgenologic examination)		+	3
Incomplete results of treatment	+		2+
Hourglass (B) type of stomach		+	3

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DISCUSSION

Dr. M. D. Hargrove (Shreveport): We are all indebted to Dr. Eusterman for this excellent presentation in reference to carcinoma of the stomach. There is one point with which we ought to be particularly impressed. That is if the patient comes to us with a digestive disturbance that might be ulcer or cancer, let us not allow that individual to get away without having tried our very best definitely to place the lesion in one class or the other, remembering that carcinoma is so very frequent in the stomach. The reason most of these patients get to the surgeon when they are inoperable is because we do not place enough importance on their initial symptoms and we do not impress upon the patient that they should come back and find out if they have an organic lesion of the stomach or not.

Dr. Donovan C. Browne (New Orleans): Needless to say, I have enjoyed Dr. Eusterman's presentation very much. Those interested in gastro-enterologic problems cannot help being impressed by the fact that in such careful observations and statistical studies lies the solution to the perplexing question of when to subject these cases to surgery. What is needed most now are just such criteria for surgical intervention and medical management. Many of his cases would seem a direct indictment of the radiologist since the criteria lay stress on size of the lesion and technic of examining, and though it may be true that roentgenology has had much to do with advancing the speciality of gastro-enterology, we must not be content to shift the responsibility too largely to the roentgenologist. We are the ones who see these cases first and I am afraid are negligent in following them through, thus losing our opportunity to add to the meager store of knowledge along this line.

An important feature was the fact that 8 per cent (if I remember correctly) of these selected cases showing malignancy occurred in individuals under 35 years of age. We cannot, therefore, safely judge the lesions on an age basis. Again it is noted the former criteria of size has its noable exception and lesions only a centimeter in diameter were definitely malignant. So if we hope to advance clinically in our management of gastric lesions the diagnostic criteria have to be improved and this may be accomplished best by such studies as Dr. Eusterman has presented.

Dr. Allan Eustis (New Orleans): I would like to ask Dr. Eusterman when he speaks of "inoperable" what is the criterion in the Mayo Clinic? I have seen many different surgeons find cancer that could not be removed, and the wound was closed without any attempt to provide drainage of the stomach. I recall one case Dr. Stone and I had where it was not possible to remove the carcinoma; it was limited to the pylorus but the lymphatics were involved. A gastro-jejunostomy was done. The man weighed 87 pounds at operation and there was no doubt as to carcinoma of the stomach. He gained 60 pounds in weight, and lived three years in perfect comfort until he died of carcinomatosis. I want to urge the surgeon to do gastro-enterostomies, because, if you make an opening the patient will be relieved of pain, and he may have considerable relief for several years.

Dr. George B. Eusterman (In conclusion): I want to thank Doctors Browne, Hargrove and Eustis for their kind discussion. Doctor Browne's observation that the small size of the lesion does not exclude malignancy is a pertinent one. The criteria which we used to consider pathognomonic for benign lesions are often unreliable.

Doctor Hargrove made an important observation so far as the practitioner is concerned. He is, so to speak, in the front line trenches and sees these patients first, often at a time when marked palliation, or cure, is still possible. The various reasons why 17 per cent of patients with gastric cancer are doomed at the time they arrive at the Clinic are more or less familiar. The first reason is procrastination, the second, errors of omission and commission on the part of the attending physician, and the third is characteristics inherent in the lesion itself which spell inoperability by the time the patient is first seen. These characteristics are: the high site of the lesion, which makes it irremovable even if diagnosed early, and the fact that the condition may be well advanced when symptoms first obtain. Any symptoms or signs that raise a healthy suspicion of the possibility of malignancy should indicate a complete examination, if nothing more than an x-ray examination by a competent roentgenologist.

Doctor Eustis asked a very pertinent question: "What constitutes inoperability?" This often can be determined by the results of x-ray and physical examination. The former, in large measure, determines the location and extent, and the latter whether or not metastases to other organs have already taken place. The cases cited by Doctor Eustis, with apparent extensive carcinoma and pyloric obstruction who recover after gastro-

enterostomy are actually cases of chronic perforated benign inflammatory lesions mistaken for carcinoma. In the old days we frequently had similar experiences, and it sometimes proved embarrassing to see the patient alive ten or twelve years later when his relatives had been told that he would not survive the operation for more than a few months.

The important thing to remember is that carcinoma of the stomach is largely a disease of middle life and when patients present themselves with gastric symptoms of short duration in the fourth to the sixth decades, carcinoma should be excluded by all available methods.

THE JUSTIFICATION FOR EXPLORATORY LAPAROTOMY IN THE ABSENCE OF A DEFINITE DIAGNOSIS*

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with
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NEW ORLEANS

Within the last year I have heard two equally distinguished surgeons make two diametrically opposite remarks about exploratory laparotomy in the absence of a definite diagnosis. One of them said that as he grew older he was more and more disinclined to open the abdomen without a fairly clearcut idea of what he was likely to find within it. The other said that as he grew older he found himself more and more often in situations in which he felt that his patients' best interests were served, in which, indeed, their lives were saved by his prompt resort to operation after he had eliminated possible medical states. That diversity of opinion represents rather fairly the two schools of thought in the matter of abdominal exploration. On the one hand are the conservative surgeons who refuse to operate except on a definite diagnosis and for whom, ordinarily, there would be only praise. On the other hand is the group composed in part of surgical enthusiasts whose resort to the knife is always immediate and in part of ordinarily conservative surgeons, ordinarily slow with the knife, who believe that under certain circumstances the wages of delay is death.

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This is no abstract discussion nor can any definite set of rules be formulated to set one's feet on the way. Every problem that arises must be settled on its individual merits. But because rules cannot be made it does not follow that principles cannot be established, and it is those principles I propose to discuss with you, briefly and in the most general fashion.

The late Lord Moynihan hit the nail squarely on the head, as he so often hit it, when he once said in a discussion of this subject, "The salvation of human life is a greater thing than a convincing, irrefutable clinical diagnosis." Arthur Curtis meant the same thing when he said in another connection, "It is better to have a less accurate diagnosis and a more favorable prognosis." And the late John B. Deaver, as was his custom, said it even more bluntly and forthrightly: "A hair-splitting diagnosis rarely gets the patient anywhere except to the grave."

I am not so sure that all the scorn which has been heaped upon so-called "unnecessary" emergency operations is altogether justified. I wonder whether surgeons who pride themselves upon their conservatism have not been inclined, in their anxiety not to resort too quickly to the knife, to take the opposite position and refrain from it rather too long. They have insisted upon a definiteness of diagnosis that many times can be achieved only at the point of death, if not actually on the autopsy table. Eliason, in a recent discussion of the surgeon's aims, stated them in the proper sequence, and they are not always so stated or so conceived. Those aims are three-fold, he says. The surgeon must determine, first, whether the symptoms are caused by a medical or a surgical state. He must determine, second, whether the condition is one which demands emergency measures. He must determine, third, if that is possible, what the exact diagnosis is. That is the order in which the surgeon should always proceed. If the first two points can be definitely established, the third, from his standpoint and from the patient's, is infinitely less important.

To quote Lord Moynihan again, "exploration for the purposes of surgical inquiry has scarcely any mortality today." But that is no

justification for the reckless use of this means of diagnosis. Only when the employment of simpler measures means the loss of time which for the patient's sake cannot be lost should the discussion of diagnosis cease and the discussion of exploration without diagnosis begin. Surgery always implies trauma. A desperately ill patient, sick with a surgical disease for which only surgery is the remedy, must take his chance with the trauma of operation. A desperately ill patient, sick with a medical state which cannot be clearly differentiated from a surgical state, must also take that risk, though never without a clear realization of the possible consequences, never until all measures that obviate the risk have been conscientiously employed. Every surgeon of experience has seen the mimicry of surgical disease by purely medical states, and many times the differentiation is absolutely impossible. When that situation arises, the patient's chance is better with exploration than without it. In spite of possible dangers and complications more lives have been lost by withholding operation under such circumstances than by employing it.

Another point which is not emphasized as it should be is this, that the mortality which attends exploratory laparotomy is nothing like the mortality which attends the medical treatment of surgical conditions. Statistics for comparative purposes may not be exact, but of the fact there can be no doubt. During the last six years we have analyzed a series of 2715 surgical cases of acute appendicitis in the New Orleans Charity Hospital, in which there occurred 157 deaths, a mortality of 5.8 per cent. Sixteen of those deaths occurred because the patients had been treated outside of the hospital by physicians who delayed advising surgery until they were certain the disease was appendicitis; in 12 cases, we might add, purgation had been added to the crime of delay. During the same period 49 patients died of acute appendicitis without operation. In seven of these cases admission to the hospital was delayed until the physician who had been called in was certain the disease was appendicitis. Surely such deaths should be laid squarely at the door of the delay caused by an endeavor to establish a definite diagnosis before operation.

The differentiation between medical and surgical conditions is by no means as simple as it sounds. Finney, in a recent paper on acute abdominal disease, lists forty conditions which at various times in his experience he has been called upon to differentiate from acute appendicitis. One of the leading textbooks of surgery lists sixty possible medical and surgical diseases which are likely to be confused with acute appendicitis. Comroe, in a paper on the medical causes of abdominal pain, lists nine main groups and twenty-seven subgroups which must be differentiated. Bearwood has reported 114 casually collected cases of diabetes in which the abdominal syndrome was pronounced, as well as a most instructive series of 14 acute surgical diseases which occurred among 1,000 consecutive diabetic patients. Wechsler has pointed out the possibility of acute or subacute abdominal symptoms in certain lesions of the brain. Finney, Jr., and Mohr have reported a series of cases of coronary occlusion simulating acute abdominal disease, a mimicry which furnishes, they say, "as nice a problem in differential diagnosis and for the exercise of sound judgment as may ever face any of us." The possibilities of error in either direction are endless. I do not remember who it was who pointed out that the true derivation of abdomen is from a root which means to conceal, but it was a sound observation, just as sound as Osler's warning that the abdominal wall interposes an insuperable obstacle to accuracy of diagnosis.

The differentiation among the multitude of possible surgical diseases introduces a host of fresh problems. The condition which confronts one is more likely than not, merely as a matter of probability, to be one of the more common surgical states. Deaver lists acute abdominal conditions in the order of intensity, with acute pancreatitis first and acute appendicitis last. But in the order of frequency, he very correctly says, the last shall be first and appendicitis must be thought of first, last and all the time. So far, so good. But rare as well as common diseases must be considered, for they may be present. The frequency of

the unusual is a paradox we might all of us bear in mind, remembering Moynihan's remark that infrequency of incidence is very often just another way of saying inaccuracy of observation. I was surprised, in 309 autopsies recently studied on our service from the clinical aspect, to note the large number of supposedly infrequent and actually rare conditions included in this material which covered a single year. There were, among other things, two cases of carcinoma of the bile ducts, four of carcinoma of the gallbladder, four of carcinoma of the liver, and one of melanosarcoma of the rectum. Less than 100 cases of some of those conditions are on record in the literature, and the finding of so many cases of such supposedly uncommon conditions within so short a period proves my point that rare diseases must be considered as well as common ones in the attempted diagnosis of acute abdominal conditions.

Another point must be considered in this connection. Merely to determine that the condition is surgical is not enough. One must determine whether it is immediately surgical. Acute cholecystitis is a case in point. I am not yet numbered among those who believe it constitutes a surgical emergency, though I grant the excellent results of some of those who do. My own experience is against that point of view, and so are the statistics collected recently from Charity Hospital by Boyce, Veal and McFetridge, on my own service. On the other hand, without opening the abdomen to see what is there, it is sometimes impossible to determine that waiting is safe, it is sometimes impossible to differentiate an acute attack of gallstone colic from acute pancreatitis, let us say, or from rupture or gangrene of the gallbladder. Ever since I operated for what I thought was a ruptured ovarian cyst and found a ruptured gallbladder in the pelvis I have felt somewhat uncertain of my diagnostic ability along those lines.

To take another illustration, it is equally difficult to determine in certain cases of acute appendicitis when operation is urgent or when it may safely be delayed. In most cases the decision is clearcut. One operates immediately or one operates in the interval. But in a small number of cases the decision is hedged about with uncertainties and the wrong course may mean death, as it did in 19 surgical and 27 nonsurgical cases in the series of cases of acute appendicitis we studied at Charity Hospital. Recently within 10 days on our own service we performed emergency appendectomies on three patients who exhibited exactly the same clinical syndrome, exactly the same abdominal findings. One of them had a normal appendix with an acute mesenteric lymphadenitis; operation did no harm but it was not necessary. The second patient had a gangrenous appendix with a small rupture; operation undoubtedly saved his life. The third patient revealed an appendiceal abscess to which neither the history nor the physical examination furnished the slightest clue. Too early operation may have caused his death, which occurred from paralytic ileus four days later; I do not know. I do know, however, that more patients who present his symptoms and who give, as he did, the story of a purgative, would be lost if operation were deferred than would be saved by refraining from it in the pious hope that localization might occur.

Let us consider other difficulties of diagnosis. Take the time element. A patient with acute appendicitis seen four hours after the onset presents a very different picture from the patient seen four days later. At that stage perhaps delay will be safe, for localization may have occurred, though the classical signs may be absent, as is clearly proved by the last case we have just quoted. But at that stage can one be really sure that the condition is a localizing appendicitis? We have case after case we have collected in our own studies in which operation was delayed on the basis of a story of appendicitis and the hope of localization, and postmortem proved the condition to be something else, often proved it to be a condition for which only surgery was the remedy. In 39 of 270 cases of acute appendicitis over 40 years of age, for instance, at which period of life, as we have repeatedly pointed out, the disease is notoriously treacherous and notoriously serious, the diagnosis was incorrect. Most of the incorrect diagnoses, fortunately, were surgical and immediate operation was

done, but 13 patients lost their lives because surgery was delayed.

This brings us to another consideration, that further confusion arises when one is dealing with children and older persons. In children the history must be secured from observers who are either careless or too closely related to have the detached point of view necessary, and physical examination is always difficult. That difficulty is rather generally realized. But it is not so generally realized about older persons, and it is exceedingly important. With many old persons senility is a factor, their faculties are failing, and an adequate history cannot be obtained. Their lessened sensibilities cause a late and less keen realization of pain, so that the handicap of delay is practically always present. Their abdominal walls are sometimes obese, sometimes atrophied, and rigidity tends to be slight or absent and distention outstanding, regardless of the disease and its usual manifestations. All of them tolerate infection and toxemia badly, just as children tolerate them badly. In older persons abnormalities of blood chemistry due to organic disease may still further cloud the picture. I have seen operation withheld in intestinal obstruction because the diagnosis of uremia was made, and I have seen operation done in uremia with the first error in mind, and I have no blame for the surgeon in either instance. Only last week we had for our clinico-pathologic conference an autopsy on a man 82 years of age who died of intestinal obstruction and who never throughout his illness and up to the hour of his death admitted that he felt very badly. He illustrates perfectly the sluggish reaction exhibited by so many aged persons to serious and lethal disease. My own policy is to resort to exploration in children and adults advanced in years far more quickly than in the middle years, for I have come to realize that in those two age groups the proportion of doubtful cases is larger than it is at any other time.

Certain physical difficulties should be emphasized. An obese abdominal wall is always difficult to palpate, though a wise surgeon does not do surgery on obese patients if any other course is open. A hypersensitive patient reacts to pain as a more stolid one does not. Edema and inflammation introduce other complications. There are endless variations in the position of the abdominal viscera and in their relationship to each other. I view with considerable uneasiness the tendency I have noted in many recent texts to correlate the clinical manifestations of acute appendicitis with the anatomic position of the organ. That variations in position many times explain variations in course I have no doubt, but I question the wisdom of trying to determine the pathology present by hard and fast rules which are founded, at that, largely on conjecture. I have seen such speculations come to naught too many times to have a great deal of faith in them.

The presence of rigidity, which is properly considered a matter of great importance, is influenced by many extraneous factors, some of which we have already considered. If it is definitely localized it is almost conclusive proof of the involvement of the underlying viscus, which is not necessarily the viscus one thinks it is, but its absence is not always indicative of the absence of local disease. The involved organ may be displaced or may lie deep in the pelvis or in contact with the non-demonstrative area of the parietes. Cope has pointed out that fatigue of the reflex is a physiologic phenomenon which is inevitable when a state of contraction has lasted beyond a certain length of time, just as it is inevitable when a marked toxemia has dulled the reflexes. Stiffness and voluntary rigidity, too, must be distinguished from the involuntary rigidity which is a true part of the disease.

It must not be forgotten that there is nothing to prevent a patient with one disease from developing another. A patient under treatment for peptic ulcer can develop acute appendicitis; I have seen it happen. A patient with pulmonary tuberculosis can exhibit a ruptured intestinal ulcer; I saw that demonstrated at autopsy. The patient who is subject to repeated attacks of gallstone colic may develop acute pancreatitis and there is grave danger of that highly fatal disease being mistaken for the chronic condition for which hitherto medical relief has been sufficient. Any pre-existing

medical disease is likely to be aggravated by the development of an acute abdominal condition and may overshadow the more urgent surgical state. A neurasthenic patient may have cried wolf so many times that a really acute condition may be overlooked. I heard of such a narrow escape recently. A woman of 70 developed a gangrenous appendix, in which rigidity was almost entirely absent, as it frequently is at that age, and which was overlooked for 24 hours by her family and her physician because they classified her complaint of abdominal pain as one of her usual lamentations.

I know of no general statements which can be safely made about the pulse rate or the degree of temperature in the diagnosis of acute abdominal disease. I know of no laboratory measures which are diagnostic. I know of no symptoms and no signs which can be relied upon. I know of no measures, in short, by which one can determine in all cases when a disease is surgical and when it is not, when surgery may be safely delayed and when surgery is urgent. And in a small group of cases, when I have exhausted such measures as come within the scope of my knowledge and experience, I resort to exploratory laparotomy without further delay, and I make no apologies for my course.

Morphia is so generally considered as clouding the diagnosis in acute abdominal conditions that I think it well to mention at this point the surprising proposition recently laid before the Staff of the Mayo Clinic by A. A. Zierold, that it should be used as a diagnostic measure. Abdominal muscle spasm, he points out, is twofold in origin, one component being a local spinal reflex, the other a widespread protective response to cortical stimulation. If the reflex due to cortical stimulation could be eliminated, as it has been proved that it can be by morphine, then, according to Zierold, whatever spasm remained would be that of an aggravated spinal reflex and would serve to identify the segment affected or even the site of irritation. He used the method in 150 cases with an error of 16, 10.3 per cent. With this error he is well pleased, remarking that it is no higher than what he calls "observational error." There were four errors in 44 cases of acute appendicitis, four in five cases of gunshot wounds, and six in ten cases of acute intestinal obstruction. The method, he admits, is therefore unsatisfactory and inadequate in gunshot wounds and intestinal obstruction, and the most satisfying results are in normal cases, in which it was correct in 100 per cent. The latter observation we consider irrelevant, as the diagnosis of normal cases is not usually a matter of the smallest importance. We doubt that in acute appendicitis or intestinal obstruction or gunshot wounds the percentage of error by other methods would be anything like as high. And we do not see, finally, how intestinal obstruction, in which the method is admittedly unsatisfactory, can be eliminated from the differential diagnosis. Even with the safeguards its author proposes, the method seems to us an unnecessarily dangerous one, and we mention it merely to condemn it. To us, observation is simpler and safer.

While I have spoken chiefly of acute abdominal conditions, in which the problem of exploration is most likely to arise, the difficulty is by no means limtied to them. I am thinking of carcinoma of the stomach, a disease for which as the years go by I have achieved an increasing fear and respect. There are two types of cases in which exploration is indicated in the absence of a definite diagnosis. One group comprises middle-aged persons with no very clear symptom complex. They are tired and anemic, they have lost weight and strength, their chief complaint is malaise, they do not want their food, they prefer not to eat it, they are constipated when they have never been constipated before, they mention digestive distress only vaguely if at all. That type of person, reckless as it sounds, I am increasingly determined to explore. I once heard a distinguished surgeon say that when he could not decide what was the matter with a patient who was having fever he automatically guessed that he had a liver abscess, and he added that his percentage of correct shots in the dark was a matter for congratulation. I am coming more and more to apply that rule to the type of patient I have just described, and I have saved some persons from death by way of

carcinoma of the stomach as a result, though sometimes I have drawn a blank, and sometimes I have been too late.

Another type of patient with gastric disease I am also determined to explore, the patient, particularly the middle-aged patient, with a supposed gastric ulcer. I am not here concerned with the exact percentage of such cases which become malignant, though I cannot share the light-hearted view of those who believe that an incidence of five to ten per cent is not sufficient to warrant routine surgery. I share Lord Moynihan's view that neither the operative nor the autopsy evidence of the transition is reliable because the earlier pathologic stage is likely to be overlaid by the later malignant disease.

The important consideration, however, is not that some ulcers end as cancer or that some supposed ulcers were always cancer. The important consideration is that even by the most expert clinical and laboratory diagnosis the differentiation is not even approximately correct, and a guess, to quote Lord Moynihan again, is a poor peg on which to hang a man's life. In a series of 107 surgical deaths from peptic ulcer which we recently studied from the records of Charity Hospital there were 17 elective cases, in eight of which, almost 50 per cent, operation was undertaken on a diagnosis of cancer. In 200 surgical cases of gastric cancer which we studied from the same institution, 50 of the patients, 25 per cent, told a story perfectly typical of ulcer, and, more tragic, 29 of them had been treated for it and lost their lives as a result of the mistake. A temporary response to medical treatment is no proof that the disease is benign. Patients with a typical history of ulcer, with laboratory findings typical of it, with a confirmatory radiologic diagnosis, often prove the utter unreliability and worthlessness of that evidence by dying of cancer. Exploration in such cases is the only safe course, and I have more than one life to my credit because I have followed that plan.

Concerning the act of exploration, there is little to be said. It can be done under local analgesia if necessary, or under ethylene anesthesia, with practically no shock. The incison may be small to begin with and enlarged as necessary, though it should not be too small to permit adequate exploration. Under no circumstances should the McBurney incision be used. Whether or not it is the proper incision for acute appendicitis may be a matter of debate, but it is never the incision for exploration. I once saw a carcinoma of the stomach overlooked because the McBurney incision was used and the trouble was assumed to be the "chronically" inflamed appendix which underlay it. And that brings us to the point that exploration must be adequate. One must be certain that the major lesion has not been overlooked because a minor one has been found. I once saw a ruptured gallbladder overlooked until after a "chronically" inflamed appendix had been removed. We have found in our study of acute appendicitis three cases in which ileostomy was done for supposed intestinal obstruction while the ruptured appendix which caused the distention of the bowel was not found until postmortem. Hertzler, in a paper on acute abdominal disasters, has presented the salient findings within and without the abdomen for various acute pathologic states, and I strongly recommend its careful perusal.

It has been the custom for some years in my department at the School of Medicine of Louisiana State University to study series of cases from the records of Charity Hospital. By this plan we have analyzed 2715 surgical cases of acute appendicitis and 49 nonsurgical deaths; 200 surgical cases of gastric carcinoma; 735 cases of intestinal obstruction; and smaller series of carcinoma of the gallbladder, carcinoma of the hepatic duct, carcinoma of the liver and similar conditions. Almost all of our papers end with the conclusion that in any suspected case in which the condition under discussion cannot be definitely and positively eliminated, exploration is the only safe measure. We find ourselves amused, at intervals, over that inevitable conclusion. But I am not so sure that we should be amused. In the past patients have owed their lives to us because we acted upon that precept, and patients will continue to owe their lives to us if we continue to act upon it. Our aim is accuracy of diag-

nosis, but our practice, when we cannot achieve our aim, is immediate exploration, for to our minds that is the only method by which the lives of our patients can be safeguarded.

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CONTINUOUS DRIP BLOOD TRANSFUSION

(MARRIOTT)

INDICATIONS FOR ITS USE WITH REPORT OF CASES*

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The institution of this newer method of administering blood by vein, namely by the continuous drip method, was adopted through the ingenious effort of Marriott in London. This internist was not content with the physiologic principles developed out of small or large doses of blood given by the varied systems of transfusion in modern usage. Marriott perceived the needs for much larger amounts of blood when administered slowly in certain cases, which did not require, and too, in other cases that would not permit, the administration of large quantities in a short period of time. The history of the first case cited in this communication may well illustrate that certain group of severe massive-hemorrhage cases which do not respond to repeated transfusions, but whose lives are saved because of the superior merits of the continuous drip when the latter is utilized.

It was Marriott's contention that blood transfusion is not sufficiently utilized and when used the blood is given in homeopathic doses. This condition is readily appreciated from the fact that a transfusion of 500 c.c. of blood to an adult does no more than augment his hemoglobin by some 8 or 10 per cent of its normal value. The present prospect of obtaining and preserving blood on a large scale for immediate use in unlimited quantities, denotes the need of the product and should surmount the difficulties of giving blood by continuous intravenous drip. This method at present requires more than one donor. As many as ten donors were used in one of Marriott's cases, yielding a total of 5620 c.c. of blood in 48 hours.

In two cases, each representing a severe and

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terminal state of a distinct condition, in which the continuous drip blood transfusion method was employed by the writer, a demonstration of the life-saving action of this procedure was made. The first example was one of repeated and exsanguinating hemorrhage from a large vessel in the bed of an old duodenal ulcer and the second exemplified hemorrhage dehydration and starvation in an intractable diarrhea caused by B. dysenteriae infection. In the latter instance, single transfusion of blood could not be undertaken because of circulatory embarrassment with coronary sclerosis making dangerous the overloading of the circulatory system with rapid transfusions.

MASSIVE DUODENAL ULCER HEMORRHAGES

Case 1. The patient, a known case of doudenal ulcer, was seen October 24, 1935, at 2 p. m., at which time he was found regurgitating bright red blood. The outline of a full stomach was clearly seen. The blood pressure was 100/60; pulse was rapid with a poor volume. After morphine a duodenal tube was inserted and the contents of the distended stomach proved to be blood.

A hypodermoclysis of 5 per cent glucose and 1 per cent saline was started and in 2 hours 1000 c.c. were absorbed, after which a direct transfusion of 250 c.c. of whole blood was given. The patient began to improve and by midnight his blood pressure was 116/70.

Improvement continued for 36 hours when the patient began to bleed again, evidenced by three liquid, tarry stools. He was taken to Hotel Dieu and 350 c.c. of whole blood was given by direct transfusion, after which a continuous infusion of 5 per cent glucose was started. The blood pressure remained up during the night, only to drop from 140 to 102/26. Another infusion of 1000 c.c. of 5 per cent glucose and 1 per cent saline was started. The blood count on that day showed 1,880,000 red blood cells and a hemoglobin of 40 per cent.

The following day his blood pressure was 108/28 and another direct transfusion of 500 c.c. whole blood was given. The blood pressure rose to 130 after the transfusion, only to fall to the previous level, for most of the day. The blood count showed 1,250,000 red blood cells and hemoglobin of 35 per cent.

On October 30, 1935 the blood pressure was 108/30 for most of the day, and another transfusion of 500 c.c. whole blood was given. The count showed 2,220,000 red blood cells and 45 per cent hemoglobin.

During the day Dr. Matas saw the patient and suggested using a continuous blood infusion of oxygenated citrated blood. This was given at 11:00 p.m. by Dr. Louis Levy, who had been called in consutlation, and continued until 4 p. m. the next day, during which time 1950 c.c. of citrated blood had been given. This was a period of 30 hours. The blood pressure rose to 117/50.

The following day, November 1, 1935, a hypodermoclysis of 1000 c.c. 5 per cent glucose and 1 per cent saline was given. From this period on the patient improved slowly and steadily until discharged December 3, 1935, with a blood count of 3,780,000 red blood cells and 55 per cent hemoglobin. The interval progress, as well as the detailed treatment with sedation, diet and hemostatics, are purposely omitted because space does not permit.

DEHYDRATION AND NUTRITIONAL EDEMA OF BACILLARY DYSENTERY

Case 2. This case is that of a white male, 65 years old, who had a typical case of bacillary dysentery of three years' duration. After I had confirmed the diagnosis by means of proctoscopic examination, smear and culture, the Duval bacillus being isolated, autogenous vaccine treatment was administered by the family physician. During the three months previous to admission to my service at Touro, February 26, 1936, the patient manifested a hypersensitiveness to the vaccine, characterized by increased frequency of stools with more blood and mucus, resulting in the patient presenting a picture of emaciation, toxemia, dehydration and anemia. Some edema of the ankles, lower extremities and evidence of fluid in the abdominal cavity were the important findings. Red blood count was 3,370,000 and hemoglobin was 45 per cent.

The following day a continuous drip blood transfusion was started. After 800 c.c. of blood was given, 1000 c.c. of normal saline was added to the apparatus.

The next day the patient complained of a chilly sensation, but the pulse remained of good volume and the rate 85 until 11:00 a. m., at which time the temperature rose to 102.4 degrees. The edema of the lower extremities had subsided greatly. At noon another continuous drip infusion of citrated blood was started, but after 100 c.c. had been given, it was discontinued because the patient had a reaction. Glucose and saline were substituted for blood and by noon of the following day the patient had received 1200 c.c. of glucose and saline. The stools for the first time contained no blood and became yellow.

At noon on March 2, 1936, 20 c.c. of citrated blood was given intravenously as a test for sensitivity. No reaction followed and the continuous blood drip transfusion was started again. After

300 c.c. had been given the patient had another reaction, so an infusion of glucose and saline was substituted for the blood.

On March 3, 1936 the patient received 250 c.c. of glucose and saline by infusion. During the night of the following day the patient received 1350 c.c. of 5 per cent glucose and 1 per cent saline. From this time until discharge an April 13, 1936, the patient received no intravenous or subcutaneous fluid or blood.

The other details of the treatment are purposely omitted to save time. It suffices to say the patient was desensitized to his autogenous vaccine, given supportive treatment of the circulation, diarrhea controlled and the nutrition maintained.

ACUTE BACILLARY DYSENTERY, TOXEMIA AND DEHYDRATION

Case 3. The patient, a 71 year old white male, was seen by me in consultation at Lexington, Kentucky. Clinically the case was typically one of an acute fulminating bacillary dysentery. When seen by me on August 22, 1936, the patient had been treated by the Graham method (sodium sulphate) and appeared very toxic, acidotic, dehydrated and fairly well exsanguinated from bowel hemorrhages. His bowels moved almost continuously with lots of blood and mucus.

The treatment during the month previous to my arrival consisted of several infusions of 5 per cent glucose and three indirect blood drip transfusions of 500 c.c. each.

On August 25, 1936 a continuous blood drip transfusion was started and within the next 16 hours 1000 c.c. of citrated oxygenated blood had been given. The following day the blood drip transfusion was started but discontinued after 150 c.c. had been given because of a febrile reaction and 10 per cent glucose was substituted. The patient showed some improvement for several days but began to have profuse bowel hemorrhages and a complicating genito-urinary infection with the dysentery organism and died August 29, 1936.

Autopsy revealed a distended colon with superficial ulcerations at the hepatic flexure. The ulceration increased toward the splenic flexure and in the sigmoid and rectum the mucosa was almost completely destroyed by the massive lesions. The left colon was attached to the lateral abdominal wall by soft adhesions which, when separated, produced a rupture in the bowel wall. Histologically the colon showed extensive necrosis which extended to the muscular coat in many places. The inflammation involved the muscularis and serosa. No ameba could be recognized in the abscesses or ulcer. The only other pathology of note was an acute pyelonephritis.

SUMMARY

In the few cases herein cited the slow administration by vein of large quantities of blood rendered encouraging results. In fact this method in certain instances may be considered as life-saving. These transfusions have been of exceptional volume and duration. However, in my cases the average volume of blood given was smaller than the average in Marriott's cases. His transfusions averaged five pints, while the average duration of the procedure was 29 hours.

One of my cases serves to affirm the indication for continuous drip blood transfusion in uncontrollable hematemesis and melena from peptic ulcer. In Marriott's transfusion series of 76 cases, there were 22 such examples.

In my two cases of bacillary dysentery with hemorrhage, marked toxemia, dehydration and nutritional edema, I have demonstrated the effect of large quantities of blood slowly administered upon these serious conditions and in so doing added to the indications for the employment of this valuable procedure. In acute bacillary dysentery, often accompanied by severe toxemia and frequently rapid loss of fluids and essential food elements, the drip transfusion should be instituted in the early stages, thereby resting the ulcerated bowel while combatting the toxemia and at the same time maintaining nutrition with the essential vitamins and food elements. In long neglected and emaciated patients with chronic bacillary and amebic dysentery, this method of feeding such a patient also helps to overcome an associated anemia, while the extensively ulcerated bowel is given an opportunity to recover. In certain selected instances this procedure will thereby prevent the development of the more serious complications and sequelae of the dysenteries, namely perforation, hemorrhages, dehydration and nutritional edema.

The drip transfusion is to be recommended in certain other types of cases showing acute symptoms from deficiency (protein and vitamin) as exemplified by scurvy, pernicious anemia, ulcerative colitis, as well as in aplastic anemia and anemias due to toxic conditions. The surgical conditions necessitating, and often benefitted by the Marriott method, will not be discussed in this paper dealing in principle with medical cases.

I wish to thank Dr. Matas for first suggesting the use of continuous drip blood transfusion in this country, Dr. Louis Levy and his associates, and Drs. Ochs and Karlin for their cooperation in the technical part of this work.

REFERENCE

Marriott, H. L., and Kekwick, A.: Continuous drip blood transfusion, Lancet, 1:977, 1935.

DISCUSSION

Dr. Rudolph Matas (New Orleans): Dr. Marriott, Resident Medical Officer of the Middlesex Hospital, London, remembering my interest in the continued glucose and saline drip which I first introduced here early in 1913, kindly sent me reprints of his articles on the Continued Blood Drip, which he had devised in association with Dr. Kekwick, of the same hospital, and which were published in the Lancet of April 27, 1935.

In October, a few months after I had received these reprints, I was called in consultation by Dr. Silverman to see a mutual friend, Dr. D., whose case he so thoroughly described, and who seemed to have been almost completely exsanguinated by a fulminating gastrointestinal hemorrhage caused by a bleeding gastro-duodenal ulcer. The indications for a continued blood transfusion seemed to apply so perfectly to his case, that I suggested its application to Dr. Silverman. He, Dr. Levy, and other members of the Hotel Dieu staff who were especially concerned as attendants on Dr. D's case, immediately improvised an apparatus based on Marriott and Kekwick's model as described in their reprint, and put this in operation that same day, (Wednesday, October 30, 1935).

As Dr. Silverman has stated in his detailed report, I believe the institution of the continuous blood drip marked the turning point in the case, in so far as the permanent restoration of the pulse rate and pulse volume (blood pressure) and hemoglobin, were concerned. Over 500 c.c. of blood had been transfused at separate intervals almost every day during the five days that preceded my visit, but they had only produced a temporary improvement in the rate and volume of the pulse.

Almost from the moment the patient was brought to the hospital he was given a continuous glucose drip but only with temporary improvement until the blood drip was instituted. The blood drip was kept up steadily for over 24 hours, but had to be discontinued when signs of edema of the lungs appeared. When the blood drip and intravenous saline and glucose infusions were discontinued, the rales in the chest and the dyspnea ceased, but the volume and rate of the pulse remained permanently improved and no further infusions or transfusions were required throughout the remainder of the illness.

The long protracted and stormy convalescence of the patient (delirium, jactitation, insomnia) was the result of the profound and prolonged ischemia of the brain caused by the enormous vascular depletion at the time of the duodenal hemorrhage. It took weeks and months for the neurons of the cortex to regain their normal functional activity. The typical post-hemorrhagic fever was also notable because of its persistence and exhausting effects. The post-hemorrhagic fever is to be interpreted as a toxemia caused by the generalized cellular necrobiasis of the tissues, especially of the more sensitive visceral organs, following the anoxemia and blood famine of hemorrhage.

The point that I would like to emphasize in connection with the drip method of Marriott and Kekwick is that by this method large quantities of blood can be continuously introduced into the venous system with perfect safety and with far greater advantage qualitatively and quantitatively for the vascular system than by the use of plain saline or compound glucose solutions, which compensate for the lost volume but fail to supply the oxygen carrying erythrocytes, and the colloidal proteins of the plasma.

I need not refer to the essential features of the technic, as these have already been elaborated by Dr. Silverman and fully explained in the description of his improvised modification of the Marriott and Kekwick model.

Dr. Isidore Cohn, who recently visited Dr. Marriott at the Middlesex Hospital in London, obtained from him the latest model of his blood drip apparatus and also a copy of the unpublished paper which Marriott and Kekwick were to read at the Oxford meeting of the British Medical Association this July (1936). Dr. Cohn, who is unavoidably absent, has kindly loaned this latest report, from which I will quote the following conclusions:

"MAIN PRINCIPLES.—The principal purpose of the work has been an attempt to demonstate the desirability for radical revision of present conceptions in regard to *dose* of blood in transfusion. It is submitted that the present customary transfusion of a point (568 c.c.) or less is woefully inadequate in severely anaemic adults. It is sought to etablish the principle that the dose in blood transfusion should be mainly regulated by haemoglobin determinations with the purpose of restoring the haemoglobin percentage to the neighborhood of the lower limits of normality (e.g. say from 20 to 80 per cent).

"The adoption of this principle necessitates transfusions of the magnitude indicated in the above table. It should be remembered that, in the average adult, a pint of blood is only equivalent to 10 per cent of the total normal haemo-

globin and can only augment the total percentage present by this amount.

"Our experience has shown that when the above principle is followed, and when really adequate volumes are transfused, the improvement in the patient is quantitatively commensurate. The change wrought is often so dramatic as to appear miraculous.

"The two principles underlying the proper practice of drip transfusion are:

(1) That the *dose* should be assessed by the haemoglobin deficit.

(2) That the *rate* of transfusion should be such as to permit of this measured dose being administered without danger—in practice, a rate not exceeding that required to raise the haemoglobin 10 per cent four-hourly.

"These principles have now been employed in 150 drip transfusions in adults at the Middlesex Hospital—the average transfusion having been 5 pints in 29 hours. (The largest single transfusion was 6.3 litres (11 pints). The longest single transfusion was 62 hours). In addition, 14 drip transfusions have been carried out in children between the ages of 15 days and 15 years. The results have been very encouraging. Recently, I. G. Wood in a careful study has confirmed the dramatic changes seen in patients following continuous drip blood transfusions.

"In the application of these principles to children the only difference depends upon their smaller size and proportionately smaller blood volume. In the assessment of *dosage* the assumption has been used that the total blood of a child is equivalent to 1/11 of its normal body weight. The adminstration of 1/10 of the calculated blood volume, in non-bleeding cases, produces a rise of 10 per cent of haemoglobin as in adults.

"Practice has confirmed this assumption and calculations based upon it.

"In regard to *rate* of transfusion it is considered, from our limited experience, that in children, as in adults, the haemoglobin should ideally be raised by not more than 10 per cent four-hourly. This many mean with a small baby a rate as slow as 2 drops per minute. In practice, however, with our present apparatus it is difficult to secure steady flows at rates less than 5 drops per minute. Consequently, we have tended to exceed the postulated ideal rate. For example, in the transfusions recorded above the haemoglobin was actually raised by 10 per cent two-hourly. No ill effects were observed. At the same time, this rate is regarded as being too fast. We are engaged in perfecting a simple device which it is believed will render possible steady flows at the lowest rate necessary.

"It will be noted in all the foregoing that drip transfusion has been put forward only in connection with the relief of anaemic states. It is now our considered opinion that in adults and children these massive transfusions have no other proven use. We deplore their employment in patients with normal haemoglobin values as such practice is highly dangerous.

"DONORS—The donors should all be compatible with the patient, and of the same group as one another. In a series of 87 drip transfusions, 390 donors were used, an average of 4½ donors per transfusion. Of the 390 donors, 333 were relatives or friends of the patients, and only 57 were from the Red Cross Society's magnificent service of voluntary donors.

"We have experienced relatively little difficulty in obtaining donors since adopting the practice in every case of putting the onus of responsibility firmly and forcibly upon the relatives whose duty it rightly is. We tell them it is up to them to raise ten or a dozen volunteers from among themselves and their friends, neighbours and workmates, and that we wash our hands of responsibility. Once the medical attendant appears to take the responsibility the relatives tend automatically to leave it to him."

At the present moment when blood transfusion is constantly growing in demand, especially in view of the almost unlimited quantities that can be injected by the continued drip, the question of "blood storage" or canning of blood in readiness for any demand has become a practical question, especially in those countries where provision for military emergencies is becoming more urgent and tangible than with us. In this connection, the use of preserved sterile cadaveric blood devised and safely applied in thousands of cases by Judine of Moscow, should be kept in mind; and likewise, the method of preserving a stock supply of blood cells and plasma fit for preservation and transportation over long distances, recently devised and successfully applied by Palazzo and Taconi, of Buenos Aires, Argentine, are acquisitions of great value at all times and circumstances in which compatible donors may be lacking.

As to the surgical question, whether to operate or not to operate while the hemorrhage is going on, it would seem that the logical procedure would be to operate immediately so as to stop the bleeding at its source but this is impossible, practically, while these patients are exsanguinated and in collapse. The prospect of improving the patients' condition so as to make them fit to stand the operation even while bleeding has vastly improved in recent years by the methods which provide for even a temporary blood replacement of the volume lost, whether by fractional transfusions or the infusion of artificial sera; but nothing, it would seem, could meet the actual replacement of blood loss like the continued blood drip.

It is hoped, therefore, that the new weapon for the treatment of hemorrhage provided by Marriott and Kekwick will soon be adopted in our hospital practice and surgical clinics, as a necessary adjunct to the current methods of transfusion and infusion.

For valuable references in this connection, see Marriott and Kekwick, Lancet, 1:977, 1935.

Proceedings Royal Soc. Med. 29:337, 1936.

Wood, I. J., British Med. J., July 18, 1936, pp. 115-121.

Dr. Louis Levy (New Orleans): My discussion, coming after the report of cases by Dr. Silverman, and the thorough review by Dr. Matas, can be of small moment.

I had the privilege, at the suggestion of Dr. Matas, of helping in the construction of this Marriott machine and of being the first one on that eventful Wednesday to use it. I may say that in looking at the use of this Marriott machine, I can see its advantages in the giving of blood. I did my first transfusion in New Orleans shortly after a visit to Crile's clinic some years ago, attaching the artery to the vein; that was the first type of transfusion done in New Orleans. Then afterwards we had the large bulb device that we carried from patient to patient, from vein to vein. Then we used syringes, after the discovery that citrated blood could be used from patient to patient. I was also the first to use the auto-transfusion, popularized by Dr. Burck. None of these methods of transfusion play a part in the continuous drip blood transfusion, which, as Dr. Matas has cautioned us, is only to be used in the severe anemias.

The first Marriott machine here was constructed by the engineer of Hotel Dieu and was like the machine loaned by Dr. Isidore Cohn, and was run on the patient as described in Dr. Silverman's article. We had all the donors we wanted and used four. Blood was poured into the machine and allowed to run in the vein of the recipient.

I believe the Marriott machine is the ideal type of apparatus for continuous administration of blood. The agitating by the oxypen keeps the blood from clotting and I have seen less reaction with this type of transfusion than with any other transfusion.

Dr. Samuel Karlin (New Orleans): The apparatus that we have here is of the original type used by Marriott and differs from the one used by Dr. Silverman only in the size and the type of filter; other than that the instruments are essentially the same.

It is important to keep the cotton dry during sterilization, otherwise it will be impervious to the passage of oxygen, and the apparatus may blow up.

"TOXIC" POSTPARTAL HEART DISEASE*

EDGAR HULL, M. D.†
and
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NEW ORLEANS

It is a well known fact that pregnancy adds to the work of the heart, and that the diseased heart may fail during pregnancy because of its increased burden. It perhaps is not generally known that the diseased heart, which has performed quite efficiently during pregnancy, may fail after parturition, when the circulatory load has supposedly been reduced. Many of the patients who develop heart failure after childbirth have heart disease of the usual etiologic types; in some patients, however, whose hearts were presumably normal before pregnancy began, heart failure occurs in the apparent absence of the usual causes of heart disease. It appears, therefore, that there is a type of heart disease which is correlated with events that transpired during pregnancy or shortly after its termination. To this type the name "toxic" postpartal heart disease** has tentatively been given. "Toxic" postpartal heart disease presents a fairly characteristic clinical picture, and seems to constitute a fairly definite clinical entity.

CLINICAL PICTURE

Symptoms appear at a variable time after parturition, most frequently within a month. The onset is usually gradual, early symptoms being swelling of the feet and ankles, slight dyspnea, and cough. Occasionally severe dyspnea occurs suddenly as the first symptom. Sometimes symptoms of cardiac embarrassment appear during the last few weeks of pregnancy, subside during the puerperium, and reappear when activity is resumed.

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*Read before the Louisiana State Medical Society, Lake Charles, April 27-29, 1936.

†From the Department of Medicine, Louisiana State University Medical Center, and the Heart Station, Charity Hospital of Louisiana.

**The observation that heart failure is apt to appear after childbirth is not original; the term "postpartal heart disease" has been used by members of the visiting and house staff of Charity Hospital for several years.

Edema gradually increases in amount and extent, so that after a few weeks it is extreme, involving the face and arms as well as the legs; large effusions are present in the pleural, peritoneal, and sometimes the pericardial cavities. A few patients have little or no edema, dyspnea and cough being the only prominent symptoms.

The heart is greatly enlarged, the rate rapid, the rhythm regular. The heart sounds are soft, and diastolic gallop rhythm is almost constantly present. A systolic blowing murmur is frequently heard at the apex. The pulse is typically of extremely small volume, sometimes being almost impalpable. The diastolic blood pressure is usually elevated, the systolic often not much higher; such pressures as 120/110 or 125/105 are frequently encountered. In some patients both the systolic and diastolic pressures are definitely high.

The triad of anasarca, gallop rhythm, and small volume pulse is so characteristic that when it occurs in a young woman the examiner's natural question is, "When did you have your baby?" Almost invariably he gets the expected answer, "Two months ago," or "Six weeks ago."

Laboratory data are inconclusive. The roentgen ray shows enlargement of all the chambers of the heart. The electrocardiogram is abnormal in most instances, but not characteristic; all complexes are often low because of the extensive edema. The urine presents abnormalities similar to those seen in other patients with heart failure, although the amount of albumin tends to be greater. The blood shows a moderate anemia in most patients, severe anemia in a few; the chemical constituents ordinarily determined are within normal limits.

An outstanding characteristic has been the lack of response to the measures commonly effective in the treatment of heart failure. The administration of morphine and the mechanical removal of pleural and peritoneal fluid are the only measures that afford much relief.

In spite of the severity of the symptoms and the lack of response to therapy, the immediate outlook for these patients is good. Their condition usually remains stationary for a week or two, and then gradual improvement, quite unrelated to treatment, begins. Edema gradually subsides; dyspnea is relieved; the heart diminishes in size and gallop rhythm disappears; the diastolic pressure falls and the pulse pressure increases. Within two or three months after the onset of symptoms the patient is apparently well. Of about twenty-five cases observed personally by one of us, only one died in the hospital.

STUDY OF THE CASE RECORDS

A summary of the case records of twenty-seven patients with "toxic" postpartal heart disease* is presented in table I. Since no spe-

TABLE I

(1) Race
- White 9
- Colored 18

(2) Age
- -20 years 2
- 20-29 years 13
- 30-39 years 12
- 39- years 0

(3) Number of Pregnancies
- Para I 9
- II 2
- III 1
- 1V 5
- V 3
- VI or more 7

(4) No patient had significant cardiac symptoms prior to pregnancy.

(5) Three patients had slight cardiac symptoms during pregnancy.

(6) Two patients had similar attacks following earlier pregnancies.

(7) Four patients had definite toxemia during pregnancy preceding heart failure: one eclamptic, two non-eclamptic.

(8) Three cases followed twin pregnancies.

(9) Relation of onset to delivery
- Before 6
  (All within 4 weeks)
- Previous to 1 week after 5
- One week to 1 month after 9
- One to 2 months after 2

*The criteria used in selection of the cases were: (1) definite cardiac failure occurring in women within six months after childbirth, (2) apparent absence of the usual etiologic types of heart disease.

More than 2 months after 3
Questionable 2

(10) Symptoms
Gradual onset 24
Sudden onset 3
Dyspnea 26
Edema { Slight or moderate 9 / Anasarca 14 } 23
Fever 3
Vomiting 2

(11) Physical Signs
A. Blood pressure
Normal 6
High 8
High diastolic only 13
B. Heart Sounds
Gallop rhythm 19
Tic-tac rhythm 1
Other abnormalities 2
Questionable data 5
C. Murmurs
Apical systolic 16
Questionable basal diastolic 2
None 7
D. Heart Size
No enlargement 0
Moderate enlargement 9
Marked enlargement 13
Questionable data 5

(12) Laboratory Data
A. Urine
Albuminuria
None 5
Slight 10
Moderate ..... 6 } 22
Marked 6
Essentially normal urine 6
Nephritic type urine 4
Nephrotic type urine 5
Heart failure type urine 12
B. Blood
(Total non protein nitrogen)
Normal 18
Elevated ..... 1 (109 mg %) (definitely)
Anemia
Moderate 2
Severe 4
None 4
No data 17
C. Electrocardiogram
Normal 4
Low voltage 7
Definite left ventricular predominance 6
Other abnormalities 11

(13) Course and Fate
Mild 8
Stormy 17
Died 2

(14) Condition on Discharge
Good 20
Poor 4
Questionable 1

cial studies were made of these patients, it is inevitable that a good bit of desirable information is lacking. Because of possible inaccuracies in the records and of bad judgment on our part in the selection of cases, it is likely that a few or several cases of heart disease due to the ordinary etiologic types have been included.

Scrutiny of table I reveals the following interesting facts regarding "toxic" postpartal heart disease:

1. It occurred twice as frequently in colored persons as in whites.

2. It followed the first pregnancy more frequently than any subsequent one.

3. The incidence of toxemias of pregnancy and twin pregnancies in the group was high.

4. All of the patients were apparently free of heart disease before the inception of pregnancy.

5. Symptoms began within a month after delivery in the majority of cases.

6. The clinical picture as described is essentially correct.

SUBSEQUENT FATE OF THE PATIENTS

Letters were sent to the twenty-five patients who recovered and to the physicians who referred those patients to the hospital. From the replies to these letters the fate of twelve of the patients was learned (table II). A study of this table indicates that if patients with "toxic" postpartal heart disease survive for a few months, they usually make complete recoveries, but that the condition may recur following subsequent pregnancies. Two patients returned

TABLE II
Later Fate of Twelve Patients with "Toxic" Postpartal Heart Disease, Eight Living, Four Dead

TABLE II

Later Fate of Twelve Patients with "Toxic" Postpartal Heart Disease, Eight Living, Four Dead

Patient Age at discharge Race	Course in Hospital	Condition on discharge	Time elapsed since discharge	Present cardiac symptoms	Subsequent pregnancies	Subsequent "toxic" postpartal heart disease	Source of information
C. C. 24 W	Stormy	Good	3 years	None since discharge	One (miscarriage)	No	Patient
B. B. 24 W	Very stormy	Apparently moribund	6 years	None, one year required for complete recovery	Two (full term)	No	Patient
F. J. 25 W	Very stormy	Good	7 months	None since 30 days after discharge	None		Patient
V. D. 31 B	Mild	Good	18 months	Dyspnea on exertion, no edema	One (full term)	Yes, all but the swelling	Patient
L. F. 22 B	Very stormy	Poor, deserted	5 years	None since 4 months after discharge. No signs of heart disease. B. P. normal.	None		Patient and personal interview
J. H. 21 W	Stormy	Fair, deserted	18 months	Dyspnea, no edema.	None		Patient
R. B. 36 W	Stormy	Good	20 months	None, one year required for complete recovery.			Patient
M. R. 38 B	Very stormy	Good	2 years	None since discharge. No signs of heart disease. B. P. normal.	None		Physician and personal interview

Deaths

Patient Age at discharge Race	Course in Hospital	Condition on discharge	Duration of life following discharge	Cause of death	Source of information
L. T. 39 B	Stormy	Good	Few weeks	"Bright's" disease	Acquaintance
E. H. 38 B	Mild	Good	1½ months	Cardiovascular disease	Physician
M. M. 25 B	Mild	Fair	Few weeks	Unknown—was not seen by physician after discharge	Physician
M. Mc. 20 B	Stormy	Poor, deserted	?	?	Postmaster

for examination. Both presented normal cardiac findings, though they had had extreme failure two and five years before respectively.

PATHOLOGY

There was only one necropsy in the series. The patient was a negro girl of 16 years, a primipara, who presented the typical clinical picture described, with extreme anasarca, gallop rhythm, and small pulse pressure. She had had dyspnea and edema for four weeks prior to delivery, but her symptoms became much worse after the baby was born. She gave no history of fever during the puerperium. She was very sick on admission, but after a few weeks gradual improvement began, and at the end of four weeks she was not dyspneic and was free of edema. After she had been allowed to sit up for short periods, she was imprudently allowed more activity. While walking to the bathroom she suddenly became markedly dyspneic and signs of acute pulmonary edema set in. In spite of venesection and rapid intravenous redigitalization, she died in about ten hours.

The heart was enlarged but its weight not increased; it weighed only 260 grams. The ventricular walls were of normal thickness. No valve lesions were present. The heart muscle was pale and friable. The gross anatomic diagnosis was diffuse non-suppurative myocarditis. Microscopically there were degeneration of the muscle fibers, interstitial hemorrhage, and perivascular accumulation of lymphoid cells.

Intense pulmonary edema was present. In the liver, spleen and kidneys healed infarctions were found; except for the small infarcts the kidneys were normal, revealing no anatomic evidence of pre-existing hypertension. Organized thrombi were found in the pelvic veins.

PATHOGENESIS

The data presented renders it certain that the relationship of pregnancy to heart failure was not coincidental in these patients, and unlikely that more than a few of them had heart disease before their pregnancies began.* Of the common etiologic types of heart disease, these cases resemble the hypertensive most closely, and it is not improbable that a few of the more elderly patients had essential hypertension. In most of the cases of postpartal heart disease, however, there are striking differences which distinguish them from heart failure due to essential hypertension,** and which indicate that these patients did not have high blood pressures before the onset of pregnancy.

It is clear, therefore, that "toxic" postpartal heart disease is due to factors that operate during pregnancy or shortly after its termination. While the data at hand are insufficient to justify definite conclusions regarding the cause of this condition, we believe that four factors which are usually or frequently present during pregnancy or the puerperium are probably concerned. These are:

1. The water retention of normal pregnancy[1].
2. Puerperal infection.
3. Toxemia of pregnancy.
4. Nutritional deficiencies.

The first factor alone cannot produce the clinical picture seen in these patients, but it might precipitate or increase edema primarily due to other causes.

Puerperal infection might act indirectly by causing anemia and increasing the body's need for protein and vitamins, or by producing glomerulonephritis with hypertension and edema†; it would hardly produce serious myocarditis directly, for heart failure does not commonly supervene in the most severe cases of childbed fever. It will be recalled that four of the patients had urinary abnormalities consistent with glomerulonephritis, and in the one case

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*(1) The absence of cardiac symptoms prior to the inception of pregnancy, (2) the fact that "toxic" postpartal heart disease can frequently be diagnosed before it is known that the patient has recently had a baby, (3) the relatively low mortality in the series, (4) the complete recovery of a considerable percentage of the patients.

**(1) Lack of predominance in more elderly patients, (2) low incidence of left ventricular preponderance in the electrocardiogram, (3) marked reduction in heart size as improvement occurs, (4) return of blood pressure to normal, (5) absence of cardiac hypertrophy and renal arteriolosclerosis in the one autopsied case.

†Glomerulonephritis not uncommonly follows very mild postpartal infections[2].

that came to autopsy evidence of past sepsis was present.

During toxemias of pregnancy three factors might operate to produce myocardial damage and edema: hypertension, albuminuria and hypoproteinemia[3], and water retention. Four of the patients definitely had toxemias, and similarities in the incidence of "toxic" postpartal heart disease and toxemia of pregnancy (predominance of negro patients, more frequent occurrence in primiparae, and high incidence of twin pregnancies in both) indicate that many or most of the others may have had asymptomatic toxemias.

Nutritional deficiencies might include deficient intake of iron, which would cause anemia; of protein, which would predispose to edema; and of vitamins (especially vitamin B) which would lead to water retention and myocardial weakness. Detailed dietary histories were not available in the case records studied, but it is definitely a fact that the diets of the poorer persons in this section are low in animal protein (and often in total protein) and in vitamins; it is not, therefore, far fetched to conceive that in women with subclinical deficiency states the added nutritional burden of pregnancy may cause the development of clinical symptoms.

The striking clinical similarity between "toxic" postpartal heart disease and the cardiac form of beriberi affords evidence of the probable importance of dietary deficiency in the pathogenesis of the former*. Further evidence is afforded by the recent observation of a patient who developed definite signs of peripheral neuritis after childbirth, together with the manifestations of "toxic" postpartal heart disease as we have described it. Her diet during pregnancy had been grossly deficient in protein and in vitamins; in addition she had a moderately severe puerperal infection. This patient definitely had beriberi, yet the occurrence of neuritis was the only feature that distinguished her illness from the other cases of "toxic" postpartal heart disease. It might be that if other factors which predispose to edema are present vitamin B deficiency will cause cardiac failure without concomitant neuritis. Interesting in this connection is the recent clinical study of Strauss[1], which suggests a possible role for protein and vitamin B deficiency in the causation of toxemias of pregnancy.

We cannot explain why symptoms do not appear until after delivery in the majority of the patients, when most of the pathogenetic factors we have considered presumably operate in lesser degree. Puerperal infection may account for their postpartal occurrence in some of the cases, but certainly not in all. Factors which have not been suspected may be present after delivery; lactation and resumption of full activity may be concerned; metabolic and endocrine maladjustments are possible factors; perhaps other sequelae than hypertension[7] and renal damage are left in the wake of pregnancy toxemias. The enticing teleologic explanation is that nature protects the pregnant woman so that the race may be perpetuated.

If the factors considered are concerned in the causation of postpartal heart failure, its incidence might be reduced by prescribing diets for pregnant women which are adequate in protein, iron, and vitamins. To patients of the poorer classes, additional iron may be given as iron and ammonium citrate or Blaud's pills, and the vitamin B of the diet supplemented by the use of brewer's yeast. Patients with toxemia of pregnancy, even though this be asymptomatic, should receive diets high in protein and vitamins, and liquids should be restricted rather than forced. Patients who have heart disease prior to the inception of pregnancy, toxemia during pregnancy, or postpartal infection should be kept in bed for several weeks after delivery, and resume activity very gradually. The slightest symptoms of cardiac embarrassment during the latter months of pregnancy or after the puerperium should call for rest in bed, fluid and salt restriction, and a high protein, high vitamin diet.

TREATMENT

Although the response to the usual measures used in the treatment of heart failure is not striking in postpartal heart failure, it is hardly justifiable to omit these measures. The patient should be digitalized, fluid and salt restricted,

*The clinical picture of these two conditions is identical if the neurologic manifestations of beriberi are excepted.[4, 5, 6]

and diuretics employed. Salyrgan may be given if the usual precautions attendant to its use are taken. Morphine must be given freely, and it is of great importance to remove large effusions in the pleural, pericardial and peritoneal cavities. Mechanical removal of edema fluid from the labia and legs by use of Southey's tubes or needles may also be resorted to advantageously. Venesection is of benefit when dyspnea is extreme.

Measures directed toward correcting possible pathogenetic factors also seem justifiable. The diet should be high in vitamins, and in protein unless there is nitrogen retention (extra protein may be added in the form of ground meat, liver, and egg white), and the vitamin B content supplemented by the administration of brewer's yeast or wheat germ extract. Iron should be given in large doses in the presence of anemia.

Rest in bed should continue several weeks after all edema has subsided, and resumption of activity should be very gradual.

ADDITIONAL CASES

Since the data used for this report has been compiled, we have observed four additional cases of "toxic" postpartal heart disease, all in colored patients. On these we obtained detailed dietary histories, complete blood pictures, and serum protein estimations. The diets of these patients apparently differed in no way from those of other negroes in this section. Anemia was present in all; moderate in two, severe in the others. The serum albumin was definitely low in all of the patients, but not much lower than the levels observed by Andes et al in normal negro males. There were no signs of neuritis in any of the patients. None of them gave a history of fever after delivery. One patient in addition to the usual symptoms observed in these cases, had profuse hematemesis on two occasions during her stay in the hospital.

Two of these patients had been delivered in the Charity Hospital. At the time of delivery they had no cardiac symptoms, and examination of their hearts had revealed normal findings; nor were their blood pressures elevated before delivery. In both of them the puerperium was uncomplicated. The normal cardiac findings before delivery suggest the probable importance of factors that operate after delivery. What these may be, we do not know.

SUMMARY

Congestive heart failure, not due to any of the usual etiologic types of heart disease, sometimes occurs in women shortly after the termination of a pregnancy. The causes of the failure are believed to be factors that operate during pregnancy or the puerperium, or both. This type of heart disease has tentatively been named "toxic" postpartal heart disease for want of a better term. It closely resembles the cardiac form of beriberi in symptoms and signs, and it is believed that relative food deficiencies probably are concerned in its pathogenesis. Other possible etiologic factors are the hypertension, hypoproteinemia and water retention of toxemia of pregnancy, the tendency to edema present in normal pregnancy, and puerperal infection.

This condition offers a better prognosis than heart failure of similar severity due to the usual causes, and complete restoration of the heart to normal is apparently possible.

The clinical picture of "toxic" postpartal heart disease is described, and data gleaned from the case records of twenty-seven patients are presented. Suggestions for its prevention and treatment are given.

DISCUSSION

Dr. M. D. Hargrove (Shreveport): I think Dr. Hull asked me to open the discussion of his paper because I showed him in Shreveport a year or so ago a patient that he felt came under this classification. Our interest was first aroused by seeing two white women in the Shreveport Charity Hospital who had been delivered within two months' time of each other by the same doctor, in the same community, and both of them had this typical group of symptoms as described by Dr. Hull. In addition to having these symptoms, these two patients and others we have seen, had this in common; they had not been to a doctor during the course of pregnancy, never had urinalysis made, or a blood pressure reading. We were unable to tell what had gone on during the course of the pregnancy. We believed that the cardiac symptoms developed during pregnancy due to some toxic factor; they did not give the impression of a nutritional disturbance though some did have a slight anemia. We also felt that the two things which helped these patients most

were rest and digitalization. Apparently they developed the cardiac symptoms from two to five weeks after delivery or after they were allowed up.

I have seen other patients with this same group of symptoms developing a few weeks after delivery, and who apparently had this same type of heart disease, if there is such a type. Some of these have died, and at autopsy there has been definite evidence of some form of chronic heart disease. One patient I recall had rheumatic heart disease.

Dr. Oscar Blitz (New Orleans): I have seen eight or ten cases with Dr. Hull at Charity Hospital during the last two years. As Dr. Hull said, anasarca, gallop rhythm, and the very small pulse pressure, have been seen in all the cases I have personally observed.

With reference to Dr. Hargrove's patient who he said had some organic lesion in rheumatic heart disease, we had a patient (Dr. Hull did not include this patient in the survey) of whom I would like to give a short history. She was admitted to Charity Hospital in 1934, had been to the antepartum clinic, no signs or symptoms of toxemia; was delivered the latter part of December and at that time blood pressure was 120/80. She showed no cardiac symptoms, no decompensation. She was discharged from the hospital eight days postpartal; came back in May of the following year and gave a history of having symptoms of cardiac decompensation six weeks following delivery. At that time in the interne's history, we found this patient had all the clinical signs and symptoms which Dr. Hull described in his paper. She was not discharged, she deserted. She was readmitted to the hospital in October of that same year and again decompensated. At this time, some compensation had taken place and she was discharged with the diagnosis of rheumatic heart disease and mitral stenosis. Some mistake was made. We first saw this patient in February 1936, she had been decompensated for six weeks. She was markedly decompensated and the anasarca was mostly ascitic fluid. The laboratory work showed a rather low plasma protein, about 5.6 gms. per 100 c.c. She was put on high vitamin diet and she improved for a period of three weeks. However, she deserted at this time also and no follow up was possible.

Dr. Edgar Hull (In conclusion): Because of lack of time our consideration of the pathogenesis of heart failure in these patients was necessarily sketchy; our reasons for believing that nutritional deficiencies, puerperal infection, and toxemia of pregnancy are concerned are included in the manuscript of the article.

We did not intend to imply that all women who develop heart failure after delivery had normal hearts before their pregnancies began; on the contrary, most of them had organic heart disease which antedated their pregnancies, usually rheumatic or hypertensive in causation. We do believe however, that most of the cases we have included in this study had normal hearts before the beginning of their pregnancies; these cases have been selected from a much larger number of cases of heart failure that occurred postpartum. We also believe that the same factors that produce "toxic" postpartal heart disease may further damage a heart which is already the seat of organic disease.

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DIAGNOSIS AND CONSERVATIVE TREATMENT OF ETHMOIDITIS*

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The limited time allotted for this brief paper does not permit a detailed description of the anatomy of the ethmoid sinuses. It is fairly well developed at birth, and comprises almost one-half of the respiratory area of this region. It is natural to infer that it is more liable to infection and disease than the other sinuses that develop after the fourth or fifth years of life. Ethmoiditis may be classed as acute catarrhal, acute suppurative, open and closed; chronic suppurative, open and closed; and chronic catarrhal or hyperplastic. It is the latter, or chronic catarrhal or hyperplastic type, that I shall stress mostly, as it is from this type that we get most of the reflex disturbances and focal infections, as a result of absorption over a long period. It is very easy for one to find a focal infection if it is located in the tonsils, teeth, or in a suppurated maxillary empyema and very easy to overlook it when in the more

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obscure ethmoid cavity. Etiologic factors are anatomical obstructions such as deviated septal deflection, narrow nares, septal spurs and malformations.

J. W. Carmack, of Indianapolis, in one hundred cases of nasal sinusitis over a period of four years, in which cultures were taken directly from the sinus operation, found a variety of organisms, but only three occurred with reasonable constancy. These in order of frequency were: staphylococcus, pneumococcus, and streptococcus. Also lowered resistance as a result of faulty nutrition is a frequent cause of sinusitis. It has been proved that a diet low in vitamin A is often the cause of infection of the upper respiratory tract.

SYMPTOMS

Acute catarrhal inflammation here constitutes part of the acute colds and is important, principally when these tissues, or parts of them, suffer the brunt of an attack or continue infected after the other regions are convalescent or recovered. There is a feeling of marked fulness of the nasal passage and naso-pharynx. The condition is bilateral except in such cases as marked acute exacerbations of a chronic infection in a restricted area.

Headaches, especially at the base of the nose, and extending to the orbits, anosmia, dry throat due to mouth breathing, neuralgic pains, malaise, dull hearing from faulty ventilation of the middle ear, all the symptoms of acute colds exist. The acute congestion around the cell openings causes retention of secretion and an increasing obstruction with discomfort and pain. These symptoms are further increased by complete closure of outlets which later result in acute empyema. Here the patient is free of malaise and most of all the headaches, anorexia, and other phenomena of an acute cold, but the fulness in the nose continues in one side, or both. The serous discharge may be reduced in volume, but continues somewhat thickened and the headache becomes more localized. A possible nasal discharge may be noted and the obstruction is observed to be continuous, or more nearly so. Open suppuration has, as its most common feature, discharge of the anterior ethmoids if the anterior cells are involved, posterior if the posterior cells harbor the infection. One-sided suppuration almost invariably points to a sinus infection. The headache becomes accentuated and is often of neuralgic type.

Ocular symptoms with inability for concentrated vision are almost always present. Anosmia, dry throat, with a glazed appearance from the discharge, and bad taste in the mouth, all combine to increase the patient's discomfort. After thorough anesthesia and shrinkage of these acute processes, the mucus membrane appears hyperemic and velvety with some petechiae and pearly elevations marking the points of greatest irritation. The discharge, when wiped away, may reappear at different parts. Here, by holding the middle turbinate over against the septum, the three points of the discharge for the anterior ethmoid may be seen. If the uncinate cells are infected, the discharge will reappear only in this location; likewise, for the posterior section emptying at the lower end of the hiatus and frontal cells high up close to the naso-frontal duct.

Chronic open suppurative ethmoiditis, as the acute open variety, has a purulent discharge as the most prominent symptom. According to location of the process, the discharge will be principally anterior or posterior. Likewise, the crust formation, which to the patient will be the most annoying complaint, will be blown in slugs into the handkerchief, and by clinging to the choana, will produce nausea and gagging to expel it posteriorly. At times, the crusts produce fits of violent sneezing. Headache is not constant.

The general health is frequently impaired, neuralgias are common and distal joints and tissues may be subject to infections from this focus. Repeated acute exacerbations make the patient think he is a marked subject for acute cold in the head. Different from the acute inflammation, the nasal discharge in such cases is almost at once purulent. This is a diagnostic point of some importance and used rightly may excuse an inability to provide prompt relief to the complaining patient. Again, the crust formation may produce violent fits of sneezing and this or other forcible dislodgement of crust may give rise to epistaxis, either in the form of a constant tingeing of the discharge or a pro-

fuse flow. A dry pharynx is a very frequent source of complaint, especially when the posterior cell group is involved.

Personally, I think that all cases of granular or follicular pharyngitis are positive indications of chronic ethmoiditis. Polypoid degeneration and polypi are often seen and their location is of value in the diagnosis of chronic open suppuration. In chronic closed empyema of the ethmoids, there is the same manifestation as in the acute process, plus the phenomena of focal infection and reflex disturbances.

Chronic empyema may be changed into an acute one at any time. Hyperplastic ethmoiditis is essentially a chronic process in which the symptomatology is wide and varied, with frequent acute exacerbations, often from trivial causes which serve usually to multiply and intensify the subjective manifestations. The headaches are mostly of the neuralgic type and may be in any of the one or more regions supplied by the nerves or ganglia in contact with the ethmoid region. The ocular disturbances are mostly sensory, although they may be motor, especially of the third and sixth nerves. Photophobia, scotomata, vitreous-opacities and even loss of vision may be experienced.

Disturbances of the sense of smell and hearing, as mentioned in the other types, are almost always present and intensified areas of polypoid degeneration and polypi may be abundant or practically absent, but are almost constant in the cells in long standing cases. Skillern thinks where there are no signs of pus and polypi are present, the diagnosis is certain. Transillumination is of no value in ethmoid and sphenoid examinations. Roentgen rays in the hands of a specially trained roentgenologist are of inestimable value but may be equally misleading in the hands of one not trained in deep sinus work.

The chief complaints other than local symptoms are gastrointestinal, as poor appetite, indigestion, chronic colitis; neuritis, usually of the back, shoulders, and arms; rheumatism, muscular, synovial soreness, and subacute joint inflammations; cardiac, usually in the form of myocarditis, and endocarditis; pulmonary, as a chronic cough, asthma, tracheobronchitis, bronchitis, bronchiectasis and peribronchitis.

John G. McLaurin mentions the four following routes of infection to the lungs: (1) lymphohematogenous, (2) hematogenous, (3) direct aspirations of infectious material into the trachea and bronchial tree, (4) direct continuity of tissue.

TREATMENT

Treatment must be both general and local. During the acute attacks, general treatment, including emptying the intestinal tract with mild cathartics, rest in bed, alkalines, light, nutritious, low protein diet and the use of such remedies as are necessary to make the patient comfortable. In way of local treatment, the basic principles of ventilation and drainage should be followed in all acute infections of the nasal sinuses. This should be done with the mildest astringents and with the least trauma possible. An aqua-ephedrin solution is very satisfactory, as it is less irritating and lasts longer. Any antiseptic pack used should be small enough to pass well up against the sinuses without pressure or trauma, as it is very easy to produce irritation, intensifying a condition we are trying to correct.

Light therapy is of unquestionable value. Suction, if used, should be handled with great caution, as there is great danger of producing trauma and herniation of the soft and swollen tissues. Promiscuous use of nose drops and sprays by the patient should be discouraged, as the over treatment often causes irritation of the nasal mucous membranes, thereby intensifying the symptoms.

In chronic types, the treatment should be directed to methods of ventilation and drainage. All anatomical obstructions, as polypi, spurs, high septal deflections should be corrected surgically. Heat, applied directly against the cells by means of diathermy, has given me most encouraging results. After thorough shrinkage, a cotton tampon wound around a metal core, and saturated with 10 per cent argyrol is passed well up against the ethmoid cells, using 250 milliampers for twelve or fifteen minutes, repeating twice a week. In the closed hyperplastic type with hyperplasia of mucous membrane and polypoid degeneration, surgery is the only means of relief, but should be done with as much preservation of turbinates

as possible. Proper correction of diet is of great importance in the undernourished and vitamin deficiency cases should be studied and corrected.

CONCLUSIONS

The greater per cent of cases will clear up under conservative local and general treatment; and surgical procedures, if necessary, should be limited to the establishment of adequate drainage.

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DISCUSSION

Dr. A. M. Peters (Alexandria): There are two distinct classifications of ethmoiditis, the acute and chronic. Of the first there is the acute catarrhal and the acute purulent, of the second there is the chronic catarrhal and the chronic purulent. In all acute cases and in the chronic cases of catarrhal type conservative therapy should be the procedure. In chronic purulent cases conservative treatment plays no role.

A majority of rhinologists favor conservative therapy. Ethmoid sinusitis is no exception, and its accompanying edema and orbital cellulitis in acute cases are no longer regarded as indications for an immediate operation. The turn from early surgical procedures is one of the comparatively recent advances in rhinology. Anatomic, embryologic and physiologic studies of the sinuses and of the upper respiratory tract have thrown new light upon the pathologic events in the nose and sinuses. Experiments have shown that an exenterated sinus can never fully regain its normal function, and any measure adopted for relief the therapeutic aim is to relieve the pathologic and re-establish physiologic conditions.

It has been shown that the nose and para-nasal sinuses form an embryologic, anatomic and functional unit, and that disease of one part affects the whole upper respiratory unit. There is no rhinitis, neither allergic nor bacterial, without a congestion of all the sinuses. There is very rarely an ethmoiditis without a similar affection of the frontal and maxillary sinuses. Some part, usually the nose, is always earlier and more intensively affected by allergins, bacteria or viruses than any other parts of the naso-sinusoid unit. It is the purpose to combat the disease at the site of first attack. Anatomic abnormalities obstructing the naso-sinusoid ducts or neglected treatment of rhinitis are chiefly responsible for faulty drainage and stasis of secretion in the sinuses. Stasis is no infection, but it favors infection by preparing a proper culture medium for bacteria. In such cases it is evident that the sinuses need more than a simple application of heat or drops or sprays. Anatomic obstruction calls for conservative surgery in the acute cases, doing a minimum that will promote ventilation and drainage, and at a second sitting later complete the operative procedure, thoroughly removing all bony obstructions blocking the nasal airway or sinus ducts. In those cases of obstruction from marked hyperemia and edema consequent to a simple or allergic rhinitis, the nasal airway and sinus ducts may be kept open by proper use of one or more of the accepted remedies. This means more than the simple application of cocaine with ephedrin, adrenalin or argyrol packs. It means that these drugs should be used in the office for a sufficient length of time and aided when necessary by moderate negative pressure until the nose and sinus ducts are well open, and this followed at home by frequent sprays of ephedrin or the like, until acute symptoms have subsided. In addition to local measures drugs are prescribed to aid in relief of pain as indicated.

Proper drainage of the sinuses is the desideratum. The less surgical intervention, and particularly in the acute cases, the better. Shrinkage of nasal mucous membrane and sinus ducts with consequent drainage may be had by local use of butyn with adrenalin or ephedrin aided in obstinate cases by use of argyrol packs and negative pressure. In the acute cases general care of the patient is always indicated; this includes rest, elimination and proper diet.

There are cases where surgery is the only safe choice but routinely I am for local measures first. When properly applied these yield a large percentage of favorable and satisfactory results. I believe in conservative treatment of ethmoiditis and the other para-nasal sinusitis, using local measures with patience and detailed attention to their application and surgery as indicated.

Dr. W. A. Wagner (New Orleans): Regarding the symptomatology of ethmoiditis, the essayist did mention the numerous symptoms and went so far as to include asthma as one of the symptoms, but there are other symptoms which are really very suggestive of ethmoiditis, particularly the old chronic type of ethmoiditis in which there may be a very chronic, mild empyema with some material accumulating in the spheno-ethmoidal recess due to drainage from a low-grade infection. In such a case, the patient detects a peculiar odor in

his own nose that is not even detected by the people about him. Other disturbances of olfaction are characteristic symptoms, as anosmia, hyperosmia and hyposmia.

On the other hand, there are variations in the sinuses which affect the symptomatology and it is known that the ethmoids are morphologically very irregular. They are not constant, not only in number but in location and delineation. They may replace a sphenoid, for example. They may be high over the orbit, or way back under the orbit. Consequently, symptoms vary in proporton to the morphology. For example, there is the patient who comes in with the point of fixation, instead of being up close, shoved off to a great extent; in other words, elongation of the point of fixation. There is a loss of accommodation and convergence due to a weakening of the intra-ocular muscles and the muscles of the orbit from absorption of toxic materials. The internal rectus is the most frequent and greatest weakened and the eye tends to turn out, exophoria. One may have neuritis of the optic nerve itself, a true choked disk or papilledema, or a neuroretinitis. In those instances the patients have diminished visual acuity in addition to diminished color acuity. They may have enlargement of blind spot, central and paracentral scotomata, relative or absolute. In addition to that, there may be nerve phenomena or symptoms. The regular Sluder syndrome, which the essayist talked about, the ethmoidal nerve pain, supra-orbital or within the eye, or the cervical syndrome in which the pain radiates down the neck and over the shoulders. There may be some of the characteristic ear symptoms where the ear is absolutely normal, although otitis media of the chronic type is sometimes associated with eustachian tube obstruction produced by drainage posteriorly.

Vertigo, a frequent symptom, may be explained in two ways. It may be toxic, on one hand, due to a vasomotor disturbance; on the other, it may be a nerve reflex through the sphenopalatine ganglia, which is connected through the great deep petrosal nerve with the cervical sympathetic plexus and sympathetic nerves of the cartoid plexus and with the supracervical ganglion of the cervical plexus, and by the nerves following out the internal tympanic branch of the occipital and auditory arteries.

I think one of the best measures in arriving at a diagnosis of ethmoiditis is by endoscopy of the nose. I think the endoscope, which is smaller, is really more suitable; I prefer it as you can get back into the recesses and really find the pathology. You do not have to wait until there is ectasia of the ethmoids or ectasia of the turbinate, where the ethmoid clamps the middle turbinate against the septum, to make the diagnosis. In many cases of the obscure type, you are going to have to get in the nose and see the pus coming out of the ostium or see the granulation tissue about the ostium, the dilated vessels or a little polyp hanging out of or adjacent to the ostium. The roentgen ray is not going to help a whole lot, but it does help some.

In radiology I use the Granger position. I think it is the one best all-around position. I supplement it with the Hertz position. The Hertz position was brought out for the sphenoid. If you make an exaggeration of the Hertz position, it will be possible to view all of the ethmoidal cells, the anterior as well as the posterior. When you use the oblique position, it not only shows you the location of the sphenoid and the ethmoids, but shows you the ethmoidal cells adjacent to the optic foramen. If there are eye symptoms, suggesting optic neuritis, there is value in that position.

The rhinologist is not like a surgeon. If a surgeon makes a diagnosis of appendicitis, there is only one thing to do,—take it out. If the rhinologist makes a diagnosis of ethmoiditis, to institute the proper treatment, the degree of pathology is imperative. I classify ethmoiditis as acute and chronic. Under acute, there is the specific and non-specific. The non-specific is further classified into infiltrating, hyperplastic, metaplastic, polypoid degenerative and the mixed, which includes any of the groups. Where you find the metaplastic or degenerative, there is nothing to do except remove it. If the structure anatomically is proved by the roentgen ray as accessible through the nose, an intranasal ethmoidectomy may be done; otherwise an external approach is necessary.

Concerning the conservative treatment, other than what the essayist has said, I believe the best method of local treatment, combined with constitutional measures, consists of ventilation and drainage. If there is a cystic turbinate or an ectatic turbinate, crush it or open it. If the ethmoid itself is ectatic, I open it. I do not say clean it out; open it, drain it. If you find a deviated septum, correct it. That is all conservative treatment.

Where surgery is not indicated at all, I think the one best measure is building up the patient's resistance. By that I utilize, not the stock vaccines or bacteriophage, but an autogenous pathogenic vaccine made according to the routine technic of Solis-Cohen. The patient's blood containing the antibodies is taken and cultures taken from the sinus or the nose proper are grown in it. One or possibly two organisms are isolated, not a group. The other group of organisms have been destroyed or their growth inhibited by the antitoxin in the blood taken from the patient. There

is obtained a selective pathogen vaccine which really is of value.

Dr. Homer Dupuy (New Orleans): The ethmoid cells present an anatomic structure which gives them a honey-comb arrangement which makes natural drainage from them a difficult process. Thus a chronic suppuration very often follows an acute ethmoiditis. Radical surgery should not be our first thought. I am in that group who apply conservative measures first. The electric motivated suction apparatus has proved of inestimable value in my practice. The suction to be effective should be used daily for at least a month. Success with such treatment should show diminution in the discharge and relief of pain in the head. Without such results, I then resort to a complete middle turbinectomy. Thus is promoted better drainage and ventilation of the ethmoid cells. Uncovering these structures in itself will render the suction apparatus more effective, and bring about a cure. I agree with the essayist, that the exenteration of the ethmoid cells by radical surgery should be the last resort. The presence of nasal polypi, and a greatly enlarged middle turbinal, is almost infallible evidence of pathological changes in the ethmoid. Add to this, disease within the eye-ball itself, appearing at the same time and on the same side as the ethmoiditis, and now we must throw all conservatism aside. With normal vision threatened, and this is a possibility not so infrequent, radical surgery is certainly indicated.

THE TREATMENT OF ALLERGY WITH NASAL IONIZATION*

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You can prove anything in medicine! In reading the literature on results of nasal ionization in allergic diseases, there is a preponderance of literature on one side claiming positive cures in a large percentage of cases, and on the other side there are large series of cases reported where the method has been a complete failure.

It is my object to give a clear and complete review of the literature with accurate evaluation of the method.

First, I shall start with a brief description of the instrument and technic. Ionization or iontophoresis, according to Dorland's dictionary, is the introduction, by means of the electric current, of ions of different sorts into the tissues of the body for therapeutic purposes. Whether or not this is correct is a mooted question. Lierle and Sage state that metallic zinc does not penetrate the tissues in the process of ionization, while Wenner states that it not only penetrates the tissues, but that when a rabbit ear was ionized on one side it also "penetrated the opposite un-ionized ear"—some penetration!

The method is not new, but has been repopularized by Dr. Warwick of Fort Worth. All the current that is necessary is a direct galvanic current which may be procured in several ways. The simple and most ideal way is the simple storage battery. Another method is by a wall plate or step-down used in a direct current. There is another type of instrument which contains mica converters, changing the current and reducing it from the alternating to the direct current. The last type of machine is a motor generator type which is the type recommended by Warwick. The type of machine is of little consequence, and results are obtained equally as good with one as the other. This statement is strenuously and vigorously denied by Warwick who states his machine is the only one at all safe to use. Certainly this is too broad a statement to be correct.

DETAILED TECHNIC

The nasal mucosa is anesthetized with pledgets of cotton, using varying mixtures of anesthetic solutions. The Warwick method uses small cotton strips, which are soaked in the purple electrolite, and packed into the nose. The nose is packed very scrupulously, being careful to pack the area above, around and under the middle turbinate. The nose is packed completely, and at some stage in the packing the long slim electrode, wrapped with cotton, is tightly inserted into the nose; the positive pole of the machine is connected with this electrode. The negative pole is attached under a rubber shield with an elastic band around the forearm. The current is gradually turned on to 10 milliamps and is permitted to flow for

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ten minutes, giving a dosage of 100 milliamp minutes. The packing is removed, and the other side treated in a similar manner.

This technic is modified by Cottle, in that instead of packing the nose with cotton a thick tragacanth jelly of 0.5 per cent zinc is used to fill the nasal cavity and serves as an electrolite. This obviates the unpleasant procedure of packing the nose. Cottle recommends 150 milliamp minute treatments.

Still another technic is used by the English who merely insert a firmly fitted, tightly wound electrode into the middle meatus, and ionize the patient for 50 milliamp minutes, using 1 per cent zinc sulphate solution. Two treatments a week apart are given.

When the Burdick people first brought out the Warwick machine they laid great stress on the necessity of the electrodes and solutions being made up of specific amounts of zinc, cadmium and tin. Hurd analyzed the electrodes and found them to contain entirely different amounts from those stated, and also in addition some other heavy metals. Examination of the electrolite showed this to be inaccurate, both as to quantitative and qualitative amounts. No tin was found in the electrolite in either examination, although Warwick states the tin forms stannic acid at the cathode and makes the membrane more tenacious.

THEORY

As to the theory of the procedure Warwick explains the action on "the basis of the sphenopalatine ganglion, which sends sensory fibers to the tongue and secretory fibers to the sublingual and submaxillary glands through the lingual nerve by way of the chorda tympani, the facial nerve and the large superficial petrosal nerve, all of which area shows a reaction to allergy, whether by inhalation of pollens or by nasopharyngeal regurgitation of protein foods.

"The sphenopalatine ganglion has sympathetic connections with the carotid plexus by way of the vidian nerve and in this way is in intimate connection with the innervation of the bronchioles. It is maintained that it is by way of this latter connection that asthma may result from irritation of the nasal mucosa. The excessive secretion of saliva, lacrimation and itching of the ears and palate which accompany hay fever are probably the result of conveyance of irritation of the nasal mucous membrane through its connection with the sphenopalatine ganglion. Hives are accounted for by way of the communicating fibers between the sphenopalatine ganglion and the superior cervical ganglion, which latter also supplies motor fibers to the bronchioles by way of the vagus. Thus, the primary object of the treatment of such symptoms will be to decrease the sensitivity of the nasal mucous membranes. This is done by ionization." This is quoted from Warwick.

Many writers have doubted the rationale of this theory. In the first place it has been found that the treatment is just as efficacious if the current is never turned on, but the nose is simply packed with the electrolite for ten minutes. In the second place, results identical with ionization have been obtained by various authors using eschoratic solutions, such as trichloracetic acid, chromic acid, phenol and strong silver nitrate. In the third place Chajutin obtains the same results by ionizing the shoulder, using a 2 per cent calcium chloride solution. Vail obtains relief from hay fever by injection of 40 per cent alcohol with 2 per cent procain into the turbinate and septum.

According to Warwick's theory, if all of the effects are explained on the basis of impulses transmitted through the sphenopalatine ganglion it would strike one as being much easier to block the ganglion itself rather than trying to block the individual nerve terminal. The regurgitation of proteins in the nasopharynx is too fantastic to warrant comment.

In practice, the reaction is usually very severe and there is a good bit of edema of the face and eyes with headaches and discomfort for a day or two. The nose is completely blocked for about five days, and there is a dirty gray thick exudative membrane which has been shown to contain broken

down epithelial cells, various fibers and blood cells. This sloughs out within the first week, leaving the nose dry and open and very red in appearance. This remains for a variable length of time. None of my cases has remained open over four weeks. In others the relief is only a day or two.

McMahon has shown definite changes in the mucous membranes with permanent scar formation.

REVIEW OF LITERATURE

In reading the literature, wide variations are found. Alden collects 700 cases with favorable results. Warwick reports 92 per cent cures in a large series of cases (226). Hurd takes the collected cases of the Burdick Company and reports in his paper "70 per cent of patients are symptom-free". He ends up rather lamely with "I am not ready to tabulate my results, as in some cases I have used the method described by Warwick, in others I have applied that method on one side and another technic on the other side, and in others I have used a still different method." Ramirez reports 125 cases, all failures.

A very full questionnaire was sent out to the Jarvis group of fifty otolaryngologists over the country and twenty-three answers were obtained. They only favorable reply was from a group member who sent in cases reported by Dr. Honiss. I had already read Honiss' article wherein he reported twenty-three cases of which six were reported a month, or less than a month, after treatment. When conclusions are drawn less than a month following treatment, certainly I think none of the deductions can be depended upon. Other reports obtained from the Jarvis group showed the same results without using the electric current as when it was turned on. Another interesting fact was obtained concerning Dr. Alden's glowing report. Alden shows by slide that the membrane is not damaged by ionization, also his percentage of cures is very high. Regarding this, one group member stated, "Inasmuch as Dr. Alden has been so enthusiastic about this procedure, one hesitates about accepting any verdict from him that is not cross checked by some other worker."

Some of the responses from the Jarvis group were in rather strong terms, and were interpreted to mean that the members had no intention of trying the technic.

SUMMARY OF RESULTS

Personally, I used the Warwick machine and technic, also nasal jelly (Cottle), and Franklin's technic of two ionizations of 50 milliamp minutes, a week apart, using 1 per cent zinc sulphate. Some fifteen cases have been treated, of which eight were subjected to the Warwick technic. Of these eight, five were seasonal hay fever patients, and three perennial hay fever patients. All were treated during the period of active symptoms (which Warwick states gives the best results) and the most relief obtained in any case was four weeks. Six patients continued to have symptoms within a week after the reaction of the treatment had worn off. Another patient's symptoms returned in full blast within three weeks, and the longest period of relief was four weeks to the day. The other seven cases were treated by various technics and were all failures.

I had one case with typical hay fever symptoms, which was negative to all skin tests. This patient's nose was cauterized with trichloracetic acid, and complete relief has been experienced for eleven months. There are frequent references in the literature to the fact that relief is more often obtained when skin tests are negative than when tests are positive; that in the so-called hyperesthetic rhinitis much more relief is reported than in true allergic cases with positive allergic tests.

As to the after results, one case ionized showed definite scars in the nasal mucous membranes, and another case showed definite atrophy of all the nasal structures with no relief from the itching, burning, or intermittent blockage. Likewise, I have a definite report of one case of hay fever which was ionized and developed asthma, following the ionization, of a very severe character, which has lasted for two years. This patient never

had asthma before. There are references in the literature to ionization having precipitated asthma. It is also difficult to gainsay McMahon's work where definite tissue injury is exhibited.

CONCLUSION

I wish to state that several of the papers in the literature leave one in doubt as to the authors' opinion of the treatment, and I wish to state fully and frankly that in using the method I not only think it an illogical, irrational treatment, but that I am convinced it is capable of doing, and does definite harm. Since the results are so poor and the likelihood of some harmful effect is so imminent, I think the procedure can only be condemned by the otolaryngologists. The cases which are cured likely never had hay fever in the first place and if they did some milder form of cauterization would give equally as good results without the danger of permanent injury.

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DISCUSSION

Dr. W. A. Wagner (New Orleans): Electric ionization is an interesting subject, and I have been interested in it for a long time. In 1922, I read an article by A. R. Friel on ionization, in which he related the studies he had made on ionizing middle ears, and particularly otitises that were of the chronic catarrhal type. He went further in the article to describe the technic which he used not only in those instances but also in the treatment of tinnitus aurium. In his text book, 2nd edition, Sturridge Coarther describes the treatment of pyorrhea by ionization; A. Bouchet of Paris, the treatment of endometritis, and Friel describes the treatment of skin diseases, eye diseases as corneal ulcers, vaginitis, rectal fissures. In the bibliography I came across an article by Dr. Stephane Leduc. In looking up the literature, I found that he wrote a textbook in 1908 on ionization and its effect in medical application. He recited the experimental work he did in ionizing the tissues both of the skin and mucous membrances, and it is to Leduc we owe ionic therapy or iontophoresis. He stated in his book, which I still have, that if you ionize the skin or the mucous membrane, using sodium chloride as the electrolyte, at the positive pole there will be developed hydrochloric acid, and

at the negative pole there will be produced sodium hydroxid.

Warwick came out with his machine, made by the Burdick Company, a special make of machine, a special kind of solution and a special kind of electrode. The essayist told us about the irregularities in the electrolite and the electrode, as shown by two different investigations regarding the relative amounts of zinc, cadmium and tin.

My work started in 1923. I started ionizing chronic otitis medias of the suppurative type. Included in that same group of cases that I began at that time were some of the sinuses. I ionized antrums and sphenoids that were empyemic, and found that ionizaion did not kill the organisms. I used zinc sulphite 2 per cent, as recommended by Friel of London in his monograph on ionization. It was the first time I came across that electrolite. The other men had recommended sodium chlorid solution.

So I tried zinc sulphate, 2 per cent, and I ionized a few allergic rhinitises at that time (that was as far back as 1923-24) and a number of cases thereafter. I dropped it in about 1928, disgusted with the treatment of otitis media, sinusitis and allergic rhinitis.

Then I began to get interested again when Warwick revived it and recommended a certain type of electrolite and a certain type of electrode, and I began to try ionization again. I tried to procure the special electrode and electrolite, but Burdick Company would not supply me with anything. They would not supply me with the electrodes and electrolite because I had my own ionization outfit made from a "B" battery of a portable radio set and some radio equipment I had procured from one of the radio establishments. With their refusal, I had to continue with the same electrolite I used before.

Warwick states that when using the machine the resistance must be between 2000 and 3000 ohms. I believe that is right. Ohm's law will bear out that fact. If you know the amperage you are going to use, and know the voltage, you can figure the resistance. If you have too much resistance, there is going to be burning of the arm at the negative pole. There is no doubt about that. The burning of the arm, I believe, is the result of both electric current plus the sodium hydroxid, which is precipitated on the skin by the electric contact. The positive pole, which is placed in the nose, is going to precipitate hydrochloric acid. There is no doubt about that. That has been proved. Whether or not zinc penetrates the tissue is a debatable question. I believe it is precipitated and histocytes carry it into the deeper tissues. McMahon (and I have seen his specimens) showed that the histocytes were carrying it into the tunica propria of the mucosa. I am rather certain it does not penetrate the mucosa at all, but is deposited as a layer on the surface and is carried on by the histocytes.

The question is, why should a company tell you to try to use this machine in such a way, and the doctor tell you it must be done with a special electrolite and a special electrode. That is questionable in my mind. I do not believe you need that certain amount of cadmium and that certain amount of tin. I think the zinc sulphate will do as much good. The question is, how much damage is done?

I have looked at a lot of these specimens and have analyzed quite a number. I have not only done that on some of my own cases, but I have had the privilege of seeing the work done up at St. Louis under Dr. Dean's staff, McMahon and Alden, whom the essayist mentioned, and a few others. I saw those specimens, and when you see the amount of inflammatory reaction that follows ionization it is identically the same thing after using trichloracetic acid in cauterizing the turbinates. There is definite destructive changes of the epithelium with marked infiltration of tunica, including lymphoid cells, histocytes, polyblasts and neutrophils, and the amount of fibroblastic infiltration that follows in the polyblastic formation is enormous.

I have seen a number of my patients who were ionized ten years back, or a little more than that, and they do not look so good to me. My results have not been good, and therefore I have sought other methods of treatment.

In the treatment of allergy one must not deviate from the etiology which is constitutional. Therefore treatment should be constitutional. Any local treatment as ionization with its destruction of the epithelium and its abnormal changes produced in the tunica associated with the subsequent altered physiology of the nose and its possible effect on the adjacent sinuses is not in my judgment sound therapy based upon etiology. Therefore I have discontinued iontophoresis again for a more rational form of therapy.

Dr. S. M. Blackshear (New Orleans): Although Dr. Womack asked me to discuss this paper I feel a hesitancy in doing so as it does not look proper to criticize a method without first having tried it. I have never tried it for the reason that it does not seem practical. It seems to me that it is treating a local manifestation of a systemic disease, or like treating diphtheria with gargles and sprays.

I saw two patients who had had this method used on them and they were having so much discomfort from their noses that they came to me for an examination. In both cases I was convinced that considerable damage had been done to the noses.

However, I am glad to hear Dr. Womack handle the situation in such a frank manner as we are all searching for the truth, and I believe he is

working along the right lines when he tells it as he sees it.

Dr. David R. Womack (In conclusion): I did not take this subject up with any positive ideas of the method. I have a machine in the office, and wish it would cure hay fever. I would be glad to use it. The machine is of no value to me, as I do not think I shall use it again, after looking at some of the noses on which I used it. I think the method is very definitely dying out. Probably next year it will be of no value at all.

Dr. Wagner said he used it a year ago, and dropped it. I think all the rest of us will drop it in time. Dr. Wagner brought up the question of resistance. I did not go into that because I thought it was too long a presentation already. Warwick lays great stress on the resistance. It does not mean a thing. When a nose is packed with an electrolite, and an electrode put in it, the current is not going to hunt around for a place to go through, but the point that makes the best contact will serve as the conducting medium. Therefore, if you have one good contact point in the nose the rest of the area may be very poorly packed and yet give a reading of low resistance.

The Burdick man helped me ionize some of these cases, and on one of them I packed the nose very carefully and very tightly, even hurting the patient in doing so. The resistance was so great as to be beyond normal limits for use. No matter how tight the arm band (negative electrode) was, on squeezing it some more, the resistance fell well within the normal limits. I repeated this several times with other cases, and it was not a matter of a dry electrode or a loose one.

MELANOSARCOMA OF THE EYE*

MALIGNANT MELANOMA

JOHN L. SCALES
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It has long been, and still is, a difficult matter to arrive at any definite conclusions about melanotic sarcoma of the eye as regards the degree of malignancy and consequently the prognosis, because of the lack of sufficient statistical data. This is the result of several causes:

1. The comparative infrequency of the disease.
2. The lack of confirmatory microscopic diagnosis.
3. The difficulty of keeping the cases under observation with follow up history long enough for the cases to be of any historical value.

I am using the terms melanotic sarcoma and malignant melanoma interchangeably, although the latter, malignant melanoma, is the term preferred by most modern authorities.

Terry and Johns[1] state that the average incidence of malignant melanoma is five out of ten thousand patients who visit eye clinics, and conclude, "It is, therefore, impossible for any one observer to collect and study in a uniform and detailed manner a large number of cases."

Dr. Laura Lane, of the Rackham Ophthalmic Cancer Research, University of Michigan, Ann Arbor, who is making a thorough and complete survey of the subject, says in a personal communication, "I have gone over thousands of records in various institutions in different parts of the country and I have not succeeded in getting a thousand cases of sarcoma and melanomascarcoma of the eye which are complete with microscopic preparations and follow up of the patient.

"When one considers that the average number of malignant tumors of all kinds in the eye seen in any large eye clinic in the United States does not exceed 25 per year, one is simply appalled by the meagerness of the records."

I think the statement of Dr. Lane bears out our common experience, that rarely is a provisional diagnosis of melanosacroma substantiated by microscopic sections. It is also our common experience, I think, that such cases are generally lost sight of, no follow up history is obtainable and even the proved cases are valueless for any conclusions as to the end results regarding recurrences, either local or metastatic, or the time of such recurrences. It is generally considered that after five years of freedom there is little danger of recurrence. However, recurrences have been reported after as long an interval as twenty-four years.

Perhaps the late recurrences should be considered as new growths rather than recurrences from the original focus.

The term malignant melanoma or melanotic sarcoma has always been regarded with a high degree of apprehension and dread regardless of the type of neoplasm to which it might have been applied. There has long been a desire

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for more discriminating use of the term, resulting in various more or less unsatisfactory attempts at classification.

In this paper I shall attempt to review and present in order what seems to me to be the latest and best thought on the subject, realizing of course that the last word has not been said.

In 1931, Major Callender,[2] Curator of the Army Medical Museum at Washington, presented at the meeting of the American Academy of Ophthalmology and Otolaryngology a most excellent paper giving a detailed study of 111 cases from material, largely, if not entirely, furnished by members of the Academy. This paper, although it deals with only 11 cases, is most instructive as the cases were carefully followed, and gives the histologic classification, the age of the patient, the location, the amount of pigment, the status of the patient at the end of certain definite periods of time and the deaths from tumor and otherwise.

An inference is drawn as to the relative degree of malignancy of the different histologic classifications. The Callender classification, for which he says no precedent is found, seems the most feasible of any yet offered and will be briefly reviewed as follows:

1. Spindle cell type, most frequent, forming the entire mass of some tumors and in all mixed tumors, and consisting of sheets, whorls, and other irregular arrangement of spindle cells with long, oval nuclei. This class he subdivides into sub-type A, and sub-type B.

2. Epithelioid type, consisting of polygonal cells, usually of relatively large size, large nuclei varying in amount of pigment, generally deeply pigmented.

3. Fascicular type, with elongated cells sometimes forming fiber-like structures; the majority of such cells are arranged in columns or fasciculi and such tumors are often called leukosarcoma.

4. Mixed cell type, the most common melanotic tumor of the eye, consisting of irregular mixtures of spindle and epithelioid type, with occasional fascicular areas. They are generally heavily pigmented.

Such a classification, even if exact and final has no great practical importance or even interest for any except the pathologist and technician, unless some reliable inference can be drawn therefrom in reference to the varying degrees of malignancy of the different histologic groups. Callender thinks this can be done, and grades them in order of malignancy as follows: (1) Epithelioid; (2) fascicular; (3) spindle cell—A. and B. The mixed cell varies greatly. The epithelioid predominates in most metastases.

In discussing the paper Dr. Jonas Friedenwald, while referring to a certain classification of his own, praised Dr. Callender's classification very highly. In a personal communication he states that he still approves and accepts Dr. Callender's classification and conclusions.

Callender and Wilder,[3] in 1930, submitted a further study of a total of 273 cases from the same source, the Registry of Ophthalmic Pathology of the Army Medical Museum, Washington, their attempt being to substantiate Callender's original conclusion by a study of silver staining fibers in the reticulum.

Terry and Johns[1] give a careful detailed and statistical study of 94 cases from the Massachusetts Eye and Ear Infirmary, together with an exhaustive bibliography using Callender's classification. They conclude, that "all cases falling into spindle types A and B were considered to have a good prognosis, and all others were considered to have a bad prognosis."

These statistical studies of 273 cases from the Registry of Pathology at Washington and ninety-four cases from Boston seem to justify the following conclusions: (a) approximately 94 per cent of melanosarcomata of the eye occur in the uvea including the choroid, ciliary body, and iris; 6 per cent at the limbus; (b) they may and do occur wherever pigment is normally present in the tissues which accounts for the extra-ocular, or epibulbar group at the limbus; (c) approximately 13 per cent were spindle cell A with a tumor death rate of nothing; 22 per cent were spindle cell B, with a death rate of 10 per cent; 8 per cent were epithelioid with a death rate of 25 per cent; 50 per cent were mixed cell type with a death rate of 35 per cent.

Of course, these figures cannot be exact because they were not studied long enough for that purpose, and different series of cases, cov-

ering different periods of time might and probably would give various percentages.

(d) The formation of pigment in the tumors is unrelated to the normal pigment in the eyes; blondes and brunettes showing about the same composition; (e) the degree of pigmentation does not indicate the degree of malignancy and therefore is no guide to prognosis; (f) contrary to what is perhaps the general belief, recurrences in the orbit are not common. Metastases, however, are more or less frequent, the liver being the location perhaps more often than all other organs combined. The channels of transmission are generally the blood vessels, although the lymph stream may be the means in some cases; (g) as would be expected the per cent of metastatic recurrence corresponds closely to the death rate. Spindle A, 0 per cent; spindle B, 7 per cent; fascicular 21 per cent; epithelioid 25 per cent, and mixed cell 37 per cent.

Callender and Wilder conclude that the original classification by cell type still holds, but a more accurate prognosis is made possible by additional classification according to fiber content, demonstrated by a certain technic of silver staining, and they work out a percentage table both as to metastatic recurrence, and death rate accordingly.

These conclusions are not final by any means but they do constitute a long step forward in the long struggle to clear away some of the fog that has obscured this whole subject, and are probably the most reliable data we have to date.

In this, as in all other evolutionary movements in medicine, it will remain for other specal workers to advance either by substantiating these conclusions or by substituting for them other proved facts.

An interesting personal communication from Dr. Lane under date March 30 states: "The whole subject of the cell typing in the melanosarcomas of the eye I do not believe is yet final. When one gets a large series of 500 to 1000 cases and notes the many times the pathologist has made the remark, 'look out for an early metastasis', and then finds the patient living ten years or more with no signs of recurrence or metastasis, one begins to doubt the prognostic value of these various cell groupings, as to prognosis. It seems that there are other very important biochemical or metabolic processes going on within the body of the cancer patient which influence the virulency, so to speak, of their tumor.

"I think Callender's classification has some good points but after looking over his collection and more than 500 other case specimens, a large number of which are now followed up completely, I do not feel that the classification holds entirely, by any means."

All of which goes to show, as stated before, that the last word has not been spoken.

I desire to present a typical case illustrative of the preceding discussion, in which there has been microscopic confirmation of the clinical diagnosis, and in which a periodic follow up has been made for nearly five years, four years and eight months, to be exact.

CASE REPORT

D. H., colored female, aged 44 years, applied to me in August, 1931, for examination and treatment of her right eye. Examination revealed a large cauliflower mass, approximately one-fourth the volume of the normal globe, which had recently ruptured and was exuding a sanguineous fluid. It involved the inner half of the cornea, but it was impossible to determine whether it originated from, or had broken through the cornea. The more or less indefinite history was that for a year or more the mass had been increasing in size and had recently ruptured. There was no pain, no palpable tension and no other evidence of intraocular growth. The mass was so large that it protruded between the margins of the closed lids. The significant statement was made that some sort of dark spot on the eye had been noticeable since infancy. It was evidently one of the so-called congenital benign pigment spots that had taken on malignant tendency in adult life. There was no history of provocative trauma.

The eye was enucleated on August 13, 1931; the recovery from the operation was uneventful, but an interesting event connected therewith supervened. On March 19, 1932, seven months after the operation, examination revealed a pedunculated pigmented mass about the size of an ordinary pea attached to the scar line in the conjunctiva at the apex of the orbit. There did not appear to be any evidences of activity elsewhere in the orbit.

This was demonstrated at a meeting of the Shreveport Eye, Ear, Nose, and Throat Club, and the members present were asked to make a diagnosis of the nature of the growth. Most of them inclined to the opinion that it was a recur-

rence of the melanoma. The tissue was snipped off and sent to the laboratory for examination.

The enucleated eye was sent to the Army Medical Museum at Washington for examination and the following report returned:

"Fungating melanotic sarcoma of epithelioid cell type arises at the limbus. There is some distortion of the cornea and some vascularization of the outer layers, with a few mononuclears in the lining of the cornea just beneath the pedicle. Posterior synechia near the pupillary area. Retinal vessels are somewhat engorged. Central vein seems dilated, otherwise the interior of the eye is essentially normal."

The small polypoid mass on the scar in the orbit referred to above was sent to the same laboratory and the following report returned: "The tissue is inflamed granulation tissue in which no tumor cells could be found."

DISCUSSION

A careful follow up of this patient has been instituted and at present, four years and eight months, there are no evidences of recurrence locally, or metastasis of the growth to other organs. There are several interesting features connected with the case.

1. The first is that she is practically a full blooded negro, the occurrence of malignant melanoma of the eye being rare in this race, a fact which has been commented on by several authorities, who have had occasion to study the case.

2. Type: the growth was of the epithelioid class, which is considered one of the more malignant kind.

3. Location: the tumor arose from the limbus, one of the rather rare locations. Callender reports an incidence of 6 per cent in this region. The mass was entirely outside the globe, and yet there has been no orbital recurrence thus far.

One of the slides which I have shows very beautifully the origin of the growth.

4. Long after enucleation, I made the interesting discovery that three months previous to that time an application of radium was made, needles being inserted in the mass, which at that time was described as being the size of a buckshot. Evidently there was a very rapid growth of the neoplasm following the radium treatment

I have three slides which I would like to present. The first, of the enucleated eye and tumor, shows the relative size of each. The second is a section of the eye and tumor. The third consists of photographs of the patient taken in December, 1935, both with and without her prosthesis.

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DISCUSSION

Dr. Noel T. Simmonds (Alexandria): Dr. Scales has stated that this is a condition which occurs in only five out of ten thousand cases. That, of course, applies to clinical cases rather than cases seen in private practice where refractions run up perhaps a good bit higher.

My experience is limited to the time when I was at Wills Hospital. We had about twelve or fifteen cases and did not have opportunity to follow them up. That is one of the difficulties Dr. Scales mentioned. Since that time I have seen only one case, and have not been able to follow that, so I cannot contribute anything original to the paper.

The important feature, as I see it, is the prognostic value you gain from that information. Some of us have seen cases of malignancy in individuals with only one eye. Sometimes this is accessible in episclera, at the limbus, or in the iris. Once in a while these patients will say—"I would rather be dead than blind." If we can do a biopsy and give a more definite prognosis than we can now, he can gamble with his life knowing what the odds are. The same thing applies to individuals having two eyes. If you can tell him what the possibilities are of enucleating the tumor and determining its type and degree of malignancy, he can definitely decide whether he would rather be one-eyed, or gamble and keep two eyes.

These remarks are based on the hope that Dr. Callender's investigations will be corroborated and generally accepted. Drs. Terry and Johns, I believe, have accepted them very well. They have been investigating, and find their results check very nicely with Major Callender's. Dr. Lane, on the other hand, is rather skeptical and lacks enthusiasm.

Dr. W. R. Buffington (New Orleans): I wish to thank Dr. Scales for bringing to our attention the subject of melanosarcoma or malignant melanoma of the eye. Primarily, these tumors arise from some part of the uveal tract: the iris, the ciliary body or the choroid. They may become

extra-ocular, as in the case reported by Dr. Scales, but a large majority of them are diagnosed while the neoplasm is still intra-ocular.

Dr. Scales has quoted extensively from Callender and Wilder, Terry and Johns, giving the degree of malignancy of the different types. I must agree with Dr. Scales that the final word has not been said relative to malignancy. In all types early enucleation is the surest prevention of metastasis. A non-fluctuating, non-transilluminating detachment of the retina must always be regarded as due to some neoplasm of the choroid. One must not hesitate when such a condition is present to enucleate the affected eye.

A sarcoma occurring in some other organ fifteen to twenty-five years after the removal of an eye must not be regarded as a metastasis but as a primary tumor. I am reporting four cases of melanosarcoma of the eye, all of more than three years' duration, with no recurrence within the orbit or metastasis in any other organ.

In the first case, Mrs. B., aged 53, the eye was enucleated in February, 1925, because of a large circumscribed non-fluctuating detachment just behind the ciliary body. The eye was sectioned and examined after enucleation by Dr. William H. Seemann, who reported mixed cell, round spindle cell type of melanosarcoma of the choroid. The patient was last seen in April, 1936. There was no recurrence nor metastasis.

Case 2. E. X., aged 78, was first seen in March, 1933, because of spontaneous rupture of the staphylomatous cornea on the previous night. The eye had been blind for twenty years as a result of injury and infection but had been quiet and painless until 1931 when it became irritable. Enucleation was done in March, 1933. The eye was examined by Dr. Lawson, who reported a non-pigmented sarcoma of the choroid. No classification as to cell type was given. There has been no recurrence, nor metastasis up to the present time.

Case 3. S. M., was first seen in May, 1934, because of severe pain and loss of vision in the left eye of three months' duration. The symptoms were due to acute congestive glaucoma with a tension of eighty milligrams. The tension was not relieved by miotics, scleral iridectomy nor trephine. The eye was finally enucleated. Pathological report by Dr. Harvey Lamb of St. Louis, Mo., was: Spindle cell melanosarcoma of the choroid.

Case 4. Mr. N., aged 53, had the eye enucleated in April, 1934, because of non-fluctuating detachment of the retina above the disc extending to the macula which caused loss of vision. The pathologist reported melanosarcoma. There has been no recurrence nor metastasis up to the present time.

There have been no recurrences, from two to ten years in any of my cases, although the first case represents a most malignant type according to Callender. Cases 2 and 3 call your attention to the fact that it is essential to examine sections of all blind eyes removed. In neither case was malignancy suspected until the eyes had been removed and histologically examined.

Dr. Isidore Cohn (New Orleans): I am not an oculist. I do not have to say that, I suppose. Since none of these patients have shown evidence of metastasis, I want to show you (slide) a case of melanoma in a man 70 years of age, referred to me six years ago by Dr. H. N. Blum, of New Orleans. By the time he came, of course there was no question of an enucleation; it was a question of an exenteration. That is exactly what I did. Within a few months there was metastasis on his chest wall, and here is another metastasis. This is a picture of the original growth and metastasis in the chest wall, which looked exactly like that.

The interesting thing is that the original specimen showed so little or practically no evidence of melanin that the question of glioma came up in connection with this. Dr. Cummings called attention to the fact, and so did Dr. Ewing, that they do not actually have to have melanin in them, that the character of the tissue is sufficient. The metastasis shows exactly the same type of lesion.

Dr. H. G. F. Edwards (Shreveport): Dr. Scales has mentioned that in one case radium needles had been inserted. This is not a reflection on radium but rather on the man who employs the radium. Melanoma is the most resistant tumor; melanoma of the eye, especially, is a hopeless condition unless an exenteration is done, as Dr. Scales has done.

Last year I had an eye man refer a patient to me for x-ray or radium treatment in whom he had removed a small, about four millimeter in size, pigmented tumor from the corneoconjunctival border. Dr. Matthews made a study of the section. This was a melanoma. I advised the doctor it was useless to use radiation and urged him to do an exenteration. That has not been done.

The success of cure of any malignant disease rests upon getting the patient before the disease has spread to remote parts. After this has occurred, any treatment will be futile. You may get palliation. I think Dr. Scales' patient, and Dr Scales too, are to be congratulated on the fact that he did a complete operation, an exenteration, and that he must have gotten the tumor before it had already spread.

I have treated a great many melanomas and every one of them have died once the disease clinically appears to have spread to remote parts. I believe if melanoma is on the foot or any portion of the cutaneous envelope, and it is possible, radical dissection should be done. If the mela-

noma is on the hand, Dr. Pack will do a radical in the axilla. If on the foot or on the leg radical inguinal dissection should be done. In this way a higher percentage of cures may be secured. Certainly radiation has no part in the treatment of melanoma.

Dr. John L. Scales (Shreveport): In reference to the matter of statistical study, one swallow does not make a summer. If one case does not prove anything, Dr. Buffington's four cases do not prove anything any more than my one. Forty might prove something; 400 might prove considerable, and 4000 might lead to some definite conclusion. In the first place, the studies I have given have been very recent, and they have been the only ones I have been able to find anywhere, of this kind, in the literature. You would be amazed at the paucity of information of that kind in all the standard textbooks you look through.

It appears very evident from what Dr. Edwards and Dr. Cohn have said that we still regard melanotic sarcoma with a great deal of dread. If these statistics turn out to be not supposition but facts; if there is something definitely conclusive about them, it certainly does give us something definite and worth while to be able to relieve some of the dread connected with these things by knowing that certain types are not as malignant and dangerous as they might have been thought to be, that is, provided these statistics are substantiated. In many of these cases the pathologist says, "Look out for early fatal termination," and the patient lives ten, twenty or thirty years. If you prove there is nothing to the malignancy idea about the melanosarcoma, then we are infinitely better off. So either way you take it, if proved or disproved, it seems to me there is something very definite to be gained.

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THE STATE MEETING

Elsewhere in the Journal will be found a more detailed account of the state meeting which will be held in Monroe April 26-28, than can be given in this column. However, it should not be amiss to point out to the members of the State Society that in the past when the state meetings were held in Monroe always they have been extremely successful. The scientific program has always been decidedly superior and the social activities have been occasions of merriment, cheer and good fellowship. Knowing the Chairmen of the various committees that are arranging for the activities in Monroe and knowing the past record of that city, it is only fair to surmise that this approaching meeting will be one of the best of the state meetings.

In addition to the speakers from the state, five distinguished guests from out of the state will appear on the program of five different sections. They have been wisely selected. A real treat will be the annual oration to be delivered by Dr. Morris Fishbein, editor of the Journal of the American Medical Association. Dr. Fishbein has intimate knowledge of the problems of medicine, his ready wit and his flowing expression need no introduction to most of the members of the State Society.

It is important for every member of the Society to be present not only because of the profit he or she can reap from the papers, essays and scientific exhibits but also from the information about new drugs, new remedies, new equipment and new books which is available in the commercial exhibit. Lastly, organized medicine should make a good showing numerically at their regular yearly meetings. It is necessary for us to show the community as a whole that we are cohesive and cooperative. Furthermore, it is through these meetings that organized medicine speaks for itself and for its individual members.

THE GRADUATE MEDICAL ASSEMBLY

In retrospect the first, of what is hoped will be a yearly series of such graduate medical assemblies, was eminently a success. For the most part invited guests did their share splendidly. Their papers were practical, scientific and instructive. The men who attended, and there were over 400 registered practicing physicians, as well as 82 interns and 139 Senior students who came as invited guests to the meetings, all these must have derived great benefit from hearing what the men of national reputation had to say on their particular subjects.

It would be unfair and unjust to the essayists to point out or select any one of the group as being particularly outstanding in his method of presentation of his subject and in the quality of his talk. Nearly all of them measured up or exceeded the anticipated standards. It was extremely good of two of the essayists to wait

over until the last night to speak to the members of the Orleans Parish Medical Society who attended the meeting in as large numbers as have ever attended an Orleans Parish Society gathering. The whole-hearted thanks of the local organization, and many of the visitors who came to the Parish meeting, should go to these men.

In addition to the morning sessions, the luncheon round table discussions and the afternoon and night sessions there was time for play. Invited guests were extensively entertained, and entertainments were provided also for the visitors. Altogether it can be said unqualifiedly that the meeting was a success, scientifically, socially and financially.

PNEUMOCOCCUS PNEUMONIA

Pneumococcus pneumonia is one of the captains of the battalions of death, to paraphrase Osler. Of all the acute infectious diseases pneumonia is responsible for more deaths between puberty and old age than any other disease in these United States. The disease strikes unexpectedly and with virulence.

Pneumonia due to the pneumococcus has been extensively studied in the last three decades and the result of these studies has been the development of a method of treatment which is satisfactory in a considerable number of cases. This method of treatment with antiserum is based largely on the use of a specific substance which is antagonistic to certain types only of the pneumococcus. It is rather unfortunate that medical men have felt it necessary always to type the sputum before administering the serum which is of value in most cases of pneumonia. Serum has been withheld from innumerable patients because of inability to get the sputum for typing or because of necessary delay in the laboratory. With the introduction of the Neufeld method of typing, the causative organism can be identified in about half an hour. It has been found that if no sputum is brought up that relative accurate typing can be brought about, according to a bulletin issued by the Advisory Committee on Pneumonia Control of the New York State Department of Health, by swabbing the back of the throat during the act of coughing. This method is not entirely accurate but at least it is better than waiting passively until eventually the patient will cough up sputum, or never will do so.

The general care of the patient is of extreme importance. Various symptoms may be met by appropriate measures. However, it is the specific treatment that is of primary importance. The effectiveness of type I antipneumococcus serum is well known. The efficacy of type II serum is not quite as generally well appreciated nor is it known widely that for types V, VII and VIII and a few of the other higher types serum likewise is equally efficacious. At the present time types I and II may be given in combination and recently there has been put on the market polyvalent serum which contains types I, II, V and VII. These four types represent slightly over 60 per cent of all cases of pneumococcus pneumonia. Therefore, and this is to be accentuated and stressed, if it is impossible to have the sputum typed, the wisest and best procedure is to give the polyvalent serum knowing that it will be effective in nearly two-thirds of all the different types of pneumonia. The serum should be administered early, and this is another reason for not brooking delay if the type of pneumococcus cannot be promptly determined. One hundred thousand units should be administered almost immediately; give 50,000 units at once and follow in from four to six hours with 50,000 more units, taking the precaution to give half an hour before the administration of the first dose 1 c.c. of the serum diluted with 10 c.c. of sterile salt solution. If the anticipated favorable result does not promptly occur, repeat in 12 hours 50,000 units and again repeat within the next 24 hours. After 200,000 to 250,000 units have been given and have not produced therapeutic results there is no benefit in continuing with the anti-serum.

Although serum reactions may be obviated by determining if the patient is sensitive to serum by the intracutaneous or the ocular test and then desensitized, such reactions are quite unusual. The part of safety, of course, is to test the patient for sensitivity and even if nonsensitive to give a small dose, 1 c.c., of serum and then wait for half an hour. Always it is advisable to have at hand a hypodermic syringe containing adrenalin 1 c.c. of 1-1000 solution.

If an acute anaphylactic reaction occurs administer adrenalin immediately and at once. Do not worry about late specific reactions, such as the thermal reactions with high fever occurring one-half to one hour after giving serum or the delayed serum reaction with urticaria coming on five to seven days after the first injection.

Other methods of treatment of pneumonia such as with vaccines, diathermy or pneumothorax are worthy of serious study but have not been placed on the same firm basis as serum treatment which has been extensively employed in all of the large medical centers where pneumonia is rife. With this method of handling the patient the death rate has been materially diminished. If serum were employed extensively throughout the country by the general practitioners undoubtedly pneumonia would be demoted to the rank of a sergeant or even a corporal in the battalions of death.

Tribute to the Doctors by the Woman's Auxiliary of the Louisiana State Medical Society

THE PRESIDENT

It is my pleasure as President of the Auxiliary again to ask the Auxiliary organizations to have March 30 as the meeting date for their "Doctor's Day" celebration. Last year this was celebrated throughout the State very enthusiastically, and the different organizations expressed great pleasure in doing so.

There is nothing dearer to the hearts of anyone than the place occupied by their family physician, and there never was anyone in the eyes of the doctors' wives like their doctor. The object of the auxiliaries, primarily, is to promote the interest of their doctor associates either in organization or individually.

Our message is to the one who suffers the cold, or the heat, or the inclement weather without flinching, answering the call of someone who is suffering the penalties of being sick. It is he who gets up from his bed at all hours of the night without complaint; it is he who takes criticism sometime unjustly given at the hands of people who have not been able to win their battles in life; it is he who never thinks of reward in a financial way; it is he who forgets the needs and requirements of his family; it is he who is willing to make all sacrifices to promote the interest of the sick and the betterment of the profession. I could write a great deal more in my own words, but I prefer to present an article, expressed by another:

"YOUR PHYSICIAN"

"Nothing can take his place—not priest, nor minister nor all the clinics that science can provide. There is a rapport and a confidence between him and his patient which has been known to accomplish miracles, and to restore to the breasts of mothers babies about to die, and to the arms of lovers, beloved turned back from death. For there's something about the very presence of the family doctor that casts out fear, melts apprehension, breaks down suspense, performs the simplest miracle of faith.

"We know how hard the life is that he's chosen. We know that he's abused, imposed upon, worn; that his days are not his own, and his nights are snatched and torn. And, we wonder, where are his rewards? What compensation is his?

"Oh, I think he is greatly repaid; greatly to be envied. His rewards are kingly prizes. The prize of welcome. That's a great reward. To have one's presence a blessing. To know that the mere sight of you brings heart ease; stirs the warm pulse, brightens the fading eye. The prize of conquest. All men like that. Winning against odds. To stay a fever, energize a pulse; throw breastworks against the advance of disease. Here, indeed, are paths of glory that do not lead to the grave but away from it. I cannot think of greater conquest.

"The prize of confidence. That's a proud possession. Some priests know it; some ministers; and friends, if they're time tried. But the family doctor is the final confessional, a refuge not only for repentant hearts, but sick and craven hearts as well. The prize of human wisdom—that deep knowledge that comes from being continually exposed to the pitiful frailties of mankind. You do not deceive the family doctor; you do not attempt to. But, knowing you, he is still compassionate; for he has learned to expect little of greatness in his fellow-man.

"Above all, I think I envy him his prize of selflessness. He is free, for he has already given up his life, so has nothing left to fetter him. There is much talk of state control of medicine; and legislation dips its partial fingers into the sterile waters of our doctors, seeking to arbitrate over their mission of mercy. I dare say there are certain restricted fields of medicine in whose confines the legislative hand could work productively.

"But the ineffable value of the human touch in medicine is something that transcends all legislation. What legislation—indeed, what politics, what state control or organized social program—can

hope to substitute that human bond that exists between the family doctor and his patient?"

Florence Fisher Parry

I trust that every auxiliary will promote this day and make it better than last year if possible, thereby enhancing good feeling among the doctors' wives as well as the doctors themselves.

Mrs. James Byron Vaughan, President.
Woman's Auxiliary.

OUACHITA PARISH

There are men and classes of men that stand above the common herd: the soldier, the sailor, and the shepherd not infrequently; the artist rarely; rarer still, the clergyman; the physician almost as a rule. He is the flower of our civilization, (such as it is) and when that stage of man is done with, and only to be marvelled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race. He brings air and cheer into the sick room, and often enough, though not so often as he wishes, brings healing.

It is fitting that we pause today to honor "our doctors" who have cleared some part of the way.

Mrs. Joseph P. Brown, President.

ORLEANS PARISH

I give you, ladies and gentlemen, the guide and guardian of your daily living—the doctor! The true physician has earned the respect of the world. He has attained this record because he has exhibited those traits of human character which constitute the warp and woof of noble living. He has never shirked his tremendous responsibilities. Night or day, come rain or sunshine, he heeds the call of the afflicted. When you consider the marvelous achievements of the surgeon, one may truly believe that his hands have divine guidance. To realize the dangers to which the doctor is subjected and to appreciate the sacrifices he has made in the cause of science, is to accord him the highest honors of the bravest of the brave.

Mrs. W. P. Gardiner, President.

CADDO PARISH

What greater evidence of our esteem could there be than the mere existence of the Woman's Auxiliary to the Shreveport Medical Society? This is a group of women held together simply because we believe in the dreams of our husbands, the most courageous dream, we believe, that it has ever been given to the high heart of man to pursue.

Mrs. Robert T. Lucas, President.

CLAIBORNE PARISH

Once more we pay tribute to the doctors of the nation. Until March 30, 1936, doctors were merely men among men. Now they have a day set aside each year in their honor. It recognizes their ever untiring efforts as servants to humanity. They are with us when we enter the world and stay with us until we depart. Many a life has been saved by the miraculous operations performed by them. Yet, the doctor received no recognition as a hero. Had he flagged a train as it approached a washed out bridge or flown the Atlantic as so many aviators have done, they would have space in red letters on the calendars of the nation. But the doctor, doing day and night service, no Sundays, or holidays; saving lives, sharing the heartaches of the widowed mother, the father, the orphaned children, and bearing the anxiety of lives depending on their ability—he was still just a doctor.

The life of the doctor is best illustrated in the beautiful story Irvin S. Cobb wrote some years ago under the caption "It Might Happen Again." It told of an old Kentucky doctor, of how he had faithfully served the community and how he had grown old and feeble in the service of humanity, and had saved nothing. Those who were too poor he did not expect to pay him, and those who were able to pay, he thought, would do so in their own good time—but few of them did. Came a time when he had to move from the office on the main street into dingy little rooms with the entrance from an alley. Beside the door he drove a stake into the ground with a board nailed on it bearing the simple legend: "Dr. Walker's Office Upstairs." His family had gone, he lived there alone. One morning some patients knocked on his door. There was no response, and they pushed it open and walked in . . .

Irvin Cobb described how the village folks put him away in the church yard. When the services were completed, and they were standing around talking about how kind and good and helpful he had been, some one remarked that they ought to erect a simple, inexpensive marker in his memory. Hearing this the village wag slipped away, hurried down to the little side entrance to the doctor's office, pulled up the sign, brought it back and placed it reverently at one end of the mound of fresh earth: "Dr. Walker's Office Upstairs."

The Woman's Auxiliary to the Claiborne Parish Medical Society extends their heartiest wishes to each and every doctor and when their earthly office is closed, may each one share an "Office Upstairs."

Mrs. H. R. Marlatt, President.

CALCASIEU PARISH

To us of the Calcasieu Medical Auxiliary, as it should be to all people, the day of March 30 will henceforth rank with the most important of those days set aside by grateful people in celebration of important dates, events, heroes and public benefactors.

We proclaim with parades, confetti, fire crackers, feasts and holidays all those people of some importance who have flown the oceans, won battles, discovered ice-covered continents, or written books. In no manner have we ever been allowed to praise, honor, or in any way, exploit those great public servitors, those heroic, unselfish workers for all humanity, the doctors. Such procedure has been both unethical and poor taste. Even that other similar profession, the law, gets full benefit of praise through the press information on cases and trials. But the medical profession has served its time at bedsides, in hospitals, in laboratories with no press bulletins given to a world that will, in the end, benefit most by this quiet service.

It is altogether fitting and proper, if we may borrow words from Lincoln, that we, who know best, should thus celebrate and honor all the unsung heroes in medicine with a special day, arbitrarily set aside for them. War heroes belong to their respective nations; discoverers and explorers are definitely serving one country; many important men who become famous have served only themselves. But a doctor, however limited in his territory, however little known by the many, has no country, no nation, no creed, no specialized group to whom he gives. He gives to the world, not only his world of his day and age but that world that is to come. He serves all living humanity and all humanity yet to come long after he himself has died.

Every item that a doctor adds to the sum total of human knowledge belongs immediately to the people and to the future. Every bit of service of healing that he renders is no part of himself, but is for the use of all men. Every call he takes, every operation he performs, every emergency he answers, every hour he gives to a test tube, is never at any time his own. It belongs to the person immediately served, or to the persons yet to be served by his work and knowledge. And yet, for such people it has been all important that their light be hidden under the proverbial bushel or, in this case, in their doctor's bag. The public must not know about its benefactors; none of these fighters must in any way be mentioned for praise. Such an attitude is, on the face of it, somehow unfair.

Therefore, we of the Calcasieu Medical Auxiliary wish to add our hearty thanks for the opportunity of March 30, an opportunity given us to give real honor where real honor has long been due, to the world's greatest helpers—the doctors.

Mrs. L. Z. Kushner, President.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

J. T. NIX CLINIC

New Orleans

At the meeting in March, Alfred E. Smith, D.D.S. presented the following paper:

PERIODONTOCLASIA

Periodontoclasia usually presents itself in two forms. One may be described where there is recession of the gums unaccompanied by the symptoms of inflammation; the second where symptoms of inflammation are more or less marked.

There are several factors regarding the cause of the first type. Among these may be considered malocclusion of the teeth and digestive disturbances. Direction of the line of force resulting from the contact of the teeth during occlusion or mandibular movements, is, or tends to be productive of abnormality in the investment tissues supporting the teeth. The correction of occlusion as well as circulatory stimulation are usually sufficient to correct such conditions.

In the inflammatory type the infiltration of the deeper tissues has often proceeded so far that the above treatment is quite inadequate. True, malocclusion must be corrected as much as possible in all cases, but that in itself is insufficient where there is extensive involvement of the tissues. Concerning involvement of the bifurcations of multirooted teeth it is necessary to find a means of reaching these deeper tissues. Particularly in these cases, the co-operation of the patient is of vital importance. The patient's efficiency regarding home care together with regular prophylactic service by the dentist is imperative. These are largely routine measures, yet they are essential in all treatment of periodontoclasia.

Curettement in so far as teeth alone are concerned does not suffice. Curettement of the tissues surrounding the tooth roots is absolutely essential to stimulate some form of tissue regeneration. The mode of treatment herein outlined which makes its attack on these filthy interdental areas consists of careful curettement to secure a full regeneration of tissue by granulation from the bottom of the pocket upwards. Under this treatment the swelling invariably subsides, peridental tenderness disappears. Suppuration is eliminated, and there begins a simultaneous granulation in the depths of the pockets, which, in time, will progress to a startling degree in rebuilding the interdental tissues.

This may be considered as a conservative method over the radical or surgical treatment. There is no question as to the efficient results of either treatment under the care of a skilled, observant operator. The conservative method of curettement is frequently used, as the desired results may be gradually accomplished with little or no shock to the patient.

Treatment at no time should be limited to one

particular form, for if so, ultimate failure is inevitable. In diagnosis and treatment outlined, careful consideration should be given to each of the following: Systemic and dietary conditions, chemical reduction of bacteria, mechanical adjustments, instrumentation and gum massage, and surgical treatment. It is often difficult to decide which method is better to employ. The method chosen depends upon the amount of vertical dimension lost, the degree of deformity, the condition of the bone around the remaining teeth, the prognosis, and the patient's physical ability to withstand the course of treatment.

Cognizance of mechanical deficiencies as well as pathologic processes in and around the teeth demands a knowledge and understanding of design and function of the organs of mastication. Nature designed and shaped hundreds of different surfaces and inclined planes of the teeth; so, in considering the treatment of periodontoclasia, we must bear in mind the vast number of geometrical planes and designs of the teeth. Each plane has a specific purpose in the scheme of mastication.

Occlusal equilibration by natural wear on teeth saves many mouths from periodontoclasia. Unfortunately, natural wear does not always progress symmetrically. The amount of wear is an extremely variable factor. Excessive wear and loosening of teeth frequently result when teeth are out of alignment.

The elimination of irritants, such as food debris, rough surfaces, bacteria, and salivary calculus, is essential. These are fundamental in every form of treatment of periodontoclasia. Once these principles are grasped, the various current treatments can be considered from the standpoint of their theoretic and practical effectiveness. If the practitioner proposes surgical treatment, the above mentioned prophylactic measures are essential.

Periodontoclasia in its simplest form usually involves inflammation at the base of the gingival sulcus, which causes a proliferation of the epithelial cells, even though they proliferate downward at the expense of the periodontal fibers of the underlying connective tissue, and are degenerated because of the irritants and congestion, and hence are loosely held together and easily torn apart to lead to deepening of the sulcus.

The word periodontoclasia means breaking down of the investment tissues of the teeth. It is a local disease in which the attacking fibers of the tooth root and the alveolar bone are progressively destroyed by inflammation. Inflammation and infection occur more readily in tissues in which the blood supply is meagre or sluggish, or in which the tissue cells are improperly nourished, or are poisoned. Vitamin deficiencies, and the presence of metabolic toxins and poisons play a part in some cases by promoting inflammation and infection. These conditions may generally be disregarded in a practical consideration of the etiology and treatment of periodontoclasia.

The greater the emphasis on local causes of inflammation the greater the success of treatment. The idea of a direct systemic causation may sometimes lead the practitioner off the track into a realm of uncertainty and speculation to the neglect of simple local conditions that can easily be discovered.

The discussion of periodontoclasia has so far been concerned with simply bacterial invasion and calculus formation due to uncleanliness about the teeth. Mechanical injury of the periodontal tissues opens the way for deep infections not necessarily associated with uncleanliness. When the shifting of the tooth is rapid or the tooth cannot find a position in which it is free of excessive stress, the condition of the periodontal membrane on the side of the stress becomes pathologic. Bone is dissolved and the periodontal membrane between the tooth and the bone is thickened. Constant backward and forward movement of the tooth during mastication prevents bone development to stabilize the tooth in its new position. As a result, on the traumatized side, is a set of vascular degenerative and inflammatory changes, which often open the way for destructive infection from without, resulting in deep periclasial pockets. Food impaction is another type which may cause harmful and serious results. Food fibers may act as a mechanical wedge to split the epithelium away from the tooth surface, and if the food is long retained, it acts as a very highly irritating foreign body causing extensive inflammation and congestion of the surrounding tissues.

THE NORTH LOUISIANA SANITARIUM

The meeting was called to order by the President on February 23, 1937, with 25 members present. After the disposal of routine business, attention was turned to the scientific program.

Dr. Lucas presented a case of hemorrhagic disease of a newborn. It was suggested that faulty diet in prenatal state may play a large part in causing these hemorrhagic conditions in the newborn. He then discussed the differential diagnosis and urged that trauma and syphilis be ruled out in every case. The case report dealt with an infant born on December 29, 1936, who began to vomit blood and pass blood from the rectum on the second day postpartal. The baby received 30 c.c. blood intramuscularly for two successive days. This therapy was supplemented by fluids and calcium gluconate and sedation. The child made an uneventful recovery to date. The case was discussed by Drs. Dickson, Webb and Mays.

Dr. Herold reported a case that was sent to the hospital with a diagnosis of diabetes mellitus and Addison's disease. After a most thorough study, it was found that the patient at the time of admis-

sion to the hospital evidently did not have diabetes nor Addison's disease. Dr. Herold made a presumptive diagnosis of Simmond's disease on the basis of emaciation, low basal metabolic rate, low blood pressure, decreased glucose tolerance and other symptoms of hypofunction. The case was discussed by Drs. Mathews, Shavin, Rigby and Mays.

Dr. Stamper then presented a case of bilateral massive renal calculi. The patient presented symptoms of backache but had not evidence of urinary infection. Laboratory investigation revealed increased calcium excretion. On a low calcium intake, the patient was later seen at Johns Hopkins, where roentgen ray picture of the genito-urinary tract revealed no stone. The diagnosis of hyperparathyroidism was then confirmed and the patient advised to have the parathyroid removed. Refusing operation, the patient was then advised to have irradiation and a subsequent parathyroidectomy if the condition did not improve. Dr. Stamper, in conclusion, urged a more conservative treatment of renal calculi and investigation of parathyroid function, especially in those patients who have recurrent stones. He also presented a case of recurrent attacks of stone with a recent formation of a large stone in the left kidney that he knew had good function. In view of the fact that the opposite kidney had had stones in the past, he removed the massive calculus out of the left kidney by nephrostomy. The patient made an uneventful recovery and to date has had no impairment of the operated kidney.

H. M. Trifon, Sec.

HUTCHINSON MEMORIAL CLINIC

Symposium on Heredity in Disease: Conducted by the Department of Preventive Medicine, Dr. C. C. Dauer presiding.

Hereditary Constitution (Dr. W. H. Perkins, Department of Preventive Medicine): The sum total of an individual's makeup developed under the manifold influence of his environment in the direction dictated by his inheritance is called his constitution or habitus. Within the limits of his ability to change his environment or to adapt himself to it, he is capable of many lines of development of his phenotype or somatic organization. But always there is beneath this a more basic framework unsusceptible to changing conditions of development or environment and called the genotype, or hereditary constitution.

Any constitutional studies must, therefore, recognize the tremendous import of the inherited basis. In order to recognize the genotype pattern in a given individual, it must be known how and where to look for evidence of it in his entire constitution. At present this can only be done on broad principles for no one is yet able to measure with any accuracy the changes from the original pattern brought about by the addition or subtraction of characteristics through environmental influences. But it is possible to see beneath the sum total of an individual's makeup certain patterns of character, which when grouped together, form resemblances to race and family types, sex character associations and, according to Draper, disease types.

It is to be noted that the anatomic and morphologic criteria of types are largely of the same order as those used in general biology for species determination; that they are strictly genetic in a sense that there is a tendency to disease determined by gene patterns and relationships and brought about by environmental influence is not so certain and remains an open question.

We cannot pass over the current enthusiasm of regarding many of our constitutional types as hormonal or endocrine in origin. This trend has sought to explain everything from race type to individual peculiarity of temperament, with, it must be admitted, but little regard for its scientific truth and accuracy. There is no real basis for assuming that because an apparently normal person presents peculiarities throughout his whole course of development, which remind us of patients with endocrinopathies, that his individuality was caused by an imbalance of certain glands of internal secretion which are admittedly able to bring about such a picture. But since such resemblance does exist and because these types tend to appear in families, we may later be able to prove that they are types dependent on a genetic pattern in which glandular inheritance plays an active part.

A group of disease conditions even more generally associated with hereditary constitution is that due to the so-called "diatheses," "tendencies," "susceptibilities," and "predispositions." Ryle, the most recent of those who have attempted to define diathesis, looks upon it as a transmissible variation in the structure or functions of tissues rendering them peculiarly liable to react in a certain way to certain extrinsic stimuli. This definition brings totgether the different opinions of the old and new schools representing diathesis and inheritance, respectively, and places the whole subject within the realm of genetic investigation.

The revival of interest in heredity and disease manifests itself in a large bibliography of medical articles dealing with inheritance in such diseases as cancer, diabetes, arteriosclerosis and epilepsy and in a group of much less tangible entities, such as, resistance or susceptibility to specific infections, allergic hypersensitiveness and idiosyncracy to certain drugs and poisons. Many competent authorities are now so insistent that cancer and diabetes and liability to certain infections and increased resistance to others have an hereditary constitutional basis, that their word has become

almost generally accepted. Yet the evidence for it still rests on a few facts which are highly suggestive but not proved.

Family incidence, when repeatedly shown in investigations in family studies, is a potent argument in favor of heredity and, especially so, when a careful analysis of all suscepted etiologic factors in the disease fails to account completely for its origin.

When it can be shown that there is a correlation between any manifestations of disease and a hereditary constitutional factor, the argument in favor of hereditary becomes even more impressive.

Garrod is insistent that there are inborn factors largely of a chemical constitutional nature in some of the errors of metabolism and hypersensitiveness to proteins and other chemical agents.

Thus heredity, although unproven, must be held suspect in the group of diseases and morbid processes so far discussed but the evidence in favor of and against it is so manifold that no attempt can be made here to detail it. It is certain that we have a formidable array of morbid conditions in man which are believed to be inherited and, therefore, may be represented in genetic patterns of individuals. If any number of them are later proved to be hereditary beyond doubt, we can then say without question that we know their primary causative factors, that is, the determiners in the chromosome inheritance. The evidence of heredity is so strong in some of these abnormal states that they are already in a position of being attacked through attempts to intercept or oppose their cause.

Heredity Defects (Dr. Harold Cummins, Department of Anatomy): The topic of this Clinic Staff Meeting reminds us of the fundamental bearing of heredity on various medical problems, emphasizing too our relative neglect of the subject in teaching. We would do well to follow the example of the College of Medicine at Ohio State, where there has been instituted recently a course in medical genetics under the direction of L. H. Snyder. This course, required of sophomores and presented in company with the work in normal physical examination, consists at present of twelve one-hour lectures, supplemented by demonstrations of clinical material and outside reading.

I have been asked to discuss the heredity of selected defects; it is true that some of these conditions have little or even no clinical importance, yet an analysis of their hereditary transmission supplies a background for better understanding of the more significant disease traits presented by other speakers, where the precise mode of inheritance is often not so easily determined.

Reference may be made to the mechanism of transmission of characteristics from parents to offspring. (Slides and explanations: genes; unit characters; multiple factors; dominance; recessiveness; sex linkage). Just as normal features behave in accord with known laws of inheritance, which may be simple in their expression or complex according to the trait under consideration, so are transmitted various structural and functional defects. (Slides of examples).

Though the laws of Mendelian inheritance had been established long before through studies of plants and animals, the first demonstration of their operation in man was reported by Farabee in 1905, based on five generations of a family presenting thirty-seven members with fingers each lacking one phalanx (brachydactly, specifically hypophalangy). About half the children in matings where one parent is affected show the anomaly, while no normal descendent of those affected has abnormal offspring. This indicates that the trait behaves as a simple Mendelian dominant, for example, like the dominance of brown eyes over blue, and since its frequency is equal in the sexes there is no sex linkage. A parallel case may be cited in the observations of Harvey Cushing, 1916, who traced through seven generations a family in which about 25 per cent of the members were affected with interphalangeal ankyloses of the fingers (symphalangy). Again about half the children of those having the ankyloses are similarly abnormal, and the condition may be rated as dominant over normal. Family histories of polydactyly, syndactyly and other digital malformations are available, sometimes showing an inheritance behavior other than dominance, but we must pass to more varied hereditary conditions.

The foregoing instances are outstanding structural departures from normal, formed as the embryo develops and naturally evident at birth. Some hereditary defects, irrevocable though they are in the genetic constitution of the individual, do not make their appearance until after perhaps many years of an apparently normal existence. Macklin and Bowman, 1926, report a familial atrophy of the peroneal muscles offering an excellent illustration of such behavior. In this family, traced through five generations, the onset of the atrophy is usually at the age of ten to twenty years, though it may be delayed until forty years. It is a dominant character. Thus an individual carrying the genetic factor, while as yet unaffected and with a truly normal mate, will produce children half of whom are predestined to the atrophy which is equally inevitable in their tainted parent.

Maculocerebral degeneration, Friedreich's ataxia and various other neurologic affections are hereditary and similarly delayed in manifestation. When the traits are recessive, as in the two examples named, the defeat would be exhibited in one out of four children of a mating in which both parents, though unaffected, carry the recessive trait; should it happen that two affected individuals reproduce then all the children are affected, as in

dominance, but, fortunately, such a combination would occur but rarely, and the possibility of reproduction of affected individuals in some of these grave conditions is nil, owing to their early death.

Some inheritances are sex-linked, for example, hemophilia, color blindness and night blindness, the determining genes being carried by the sex chromosomes and behaving in these examples as responsive.

The mechanism of inheritance is frequently not the simple transmission of a unit character, but is dependent upon the combination of two or more factors. Sanders, 1934, reports on the inheritance of harelip and cleft palate, an illustration of multiple-factor recessive inheritance. In Holland, where his data were collected, the frequency of harelip is once in 954 births; the complexity of the genetic combinations necessary for the expression of the defect is indicated in Sanders' estimate that one of sixteen persons bears determining factors.

Heredity in the Degenerative and Metabolic Diseases (Dr. W. A. Sodeman, Department of Medicine): The usual methods of genetics, as applied by the experimental geneticist, have limitations in their application to the human. Difficulties arise in: (1) Lack of control of human matings; (2) the life span of the human is long so that one observer may not study many generations first hand; (3) inadequacy of data on families; (4) lack of large families; (5) lack of interest on the part of the physician; (6) the varying environment as a precipitating cause and (7) the inadequacies of diagnosis. Such are the problems confronting one attempting to show conclusively the place and importance of heredity in the degenerative and metabolic diseases.

Methods of study suitable for use in the establishment of heredity in human diseases are, briefly: (1) The incidence of consanguineous marriage in parents. This is 0.2 per cent in the general population. Figures above this indicate hereditary factors and recessiveness of the factor. (2) Study of identical twins; (3) the frequency of disease in related and unrelated persons; (4) pedigree method and (5) statistical analyses.

Essential Hypertension. All of these methods have been applied to hypertension. An enumeration of all such data would be too time-consuming. Carefully controlled studies indicate that in patients with essential hypertension the familial incidence of vascular disease far exceeds that of patients suffering from other complaints. Family after family is reported with definite hereditary trends.

Weitz, using the pedigree method, has added much to our knowledge of heredity in hypertension. He studied the collateral relatives rather than the more remote generations. Such individuals were available for examination and definite objective signs of disease were substituted for heresay evidence in a history. Omitting the details of his analysis I will quote his conclusions that the predisposition to essential hypertension behaves in the majority of cases as a Mendelian dominant. Studies of identical twins in widely divergent environments are confirmatory of Weitz's conclusions.

There are, of course, those who deny heredity as a factor of importance in essential hypertension. This group brings forward environment as the all important factor, particularly psychic reactions. These are, as well, often secondary to the hypertensive state. The negro in his native land seldom develops hypertension. In 1800 negroes examined in Africa no instance of hypertension was found. Transplanted to this country, the negro commonly develops essential hypertension. Environmental factors and admixture of blood appear to be important. The predisposition may be present with a necessity for environmental factors to bring it out.

Arteriosclerosis. Hereditary influences are known to exist in arteriosclerosis of the brain and heart. Arteriosclerosis occurs in all of us, particularly beyond the age of 40. The extent necessary to cause symptoms occurs early in some of us and late in others. The early occurrence of the disease in the absence of etiologic agents known to hasten its progress, such as diabetes and hypertension, is not unusual and entire families have shown this tendency. Such changes are apt to choose one portion of the body almost exclusively, or in more marked form, expressing itself, for example, as coronary disease, or apoplexy. The information available in the literature is scanty and often confused by the presence of essential hypertension, a strain known to accelerate the process. From this standpoint much of the available data are valueless, for it is estimated that two-thirds of all cases of well marked peripheral arteriosclerosis have a hypertension. Familial histories and the other avenues of approach to heredity in disease have been applied to the sclerotic syndromes. All of us may live sufficiently long to develop the general sclerotic process which may progress sufficiently to produce death. In certain families, however, the process is more markedly localized and comes on at an extremely early age, producing a family history in which hereditary factors of importance cannot be denied.

Diabetes Mellitus. Perhaps the most important work on heredity in diabetes has been done in this country by Joslin and his group. These workers have attempted to relate diabetic inheritance to the Mendelian expectation, considering at first that a single recessive gene was the genetic factor concerned. Others believe that transmission may be dominant as well. Cammidge considers this of clinical importance. He states that the dominant variety is invariably mild and easily controlled

by diet alone. It usually persists for many years, even in young people without causing serious symptoms. The recessive form is more serious. Transmission by multiple genes is also described.

The racial factor, that a high per cent of cases occurs in Jews, is also significant evidence.

In all these diseases, hypertension, arteriosclerosis, and diabetes mellitus, most observers agree that inheritance plays a part. The relative importance of heredity and environment in their interaction with each other is the basis of most disagreement. Such evaluations are so far incomplete. The settlement of these problems would be of practical importance because these diseases are so frequent in their occurrence, and are, unlike allergic states, killing diseases. Such information could be helpful in diagnosis and treatment as well as prevention.

Genetic Factors in Resistance to Infectious Diseases (Dr. C. C. Dauer, Department of Preventive Medicine): Before the discoveries of Pasteur the question of heredity was more seriously considered than later, but in recent years it is again being studied intensively. Tuberculosis was at one time regarded as due to a constitutional weakness hereditarily transmitted, and this idea has never been discarded completely.

The groundwork of experimental knowledge of resistance to infectious disease was laid about 30 years ago by workers with plant diseases. Resistance was found to be inherited in some instances on multiple and in some on a single factor basis with resistance dominant more frequently than susceptibility. Inborn resistance to one infection generally proved independent to another. No anatomical or physical mechanism has thus far been proved casually related to resistance or susceptibility. This latter statement may also be said to apply to animals.

Although a number of observations have been reported on the possibility of an hereditarily transmitted resistance in certain strains or breeds of animals, the studies of Webster will be used here because they have been more rigidly controlled. Working in the Laboratories of the Rockefeller Institute of Medical Research since 1923, Webster has been able to show that batches of animals, in this instance mice, bred in the laboratory in an effort to control all possible environmental variables, if exposed to infectious agents in a way simulating nature, differed from batches of uncontrolled mice. Selective breeding experiments seem to indicate that certain strains of mice are highly resistant to certain bacterial or virus infections, while other strains of mice are very susceptible. Crossing a highly resistant and highly susceptible strain resulted in mortalities of the progeny as would be expected on the basis of single factor type of Mendelian inheritance for resistance. Resistance proved dominant in each instance. Individuals inherently resistant or susceptible to one infection may or may not prove likewise resistant or susceptible to another.

Webster's conclusions regarding the importance of genetic resistance in certatin strains of mice have been questioned on the ground that all environmental influences have not been taken into account. When viewed in the light of other observations on animals Webster's work does strongly suggest that genetic factors are largely responsible, in some instances at least, for an increase in resistance.

Some experimental work which has been reported in recent years is suggestive of an hereditary influence in resistance to certain diseases in man. In some outbreaks of poliomyelitis in recent years it has been reported that a greater number of cases of poliomyelitis occurred in persons who were in blood group A than in group O. Another investigator reports that individuals belonging to group B appear to possess a relatively greater degree of natural resistance to poliomyelitis infection. This statement was made after testing the virucidal properties of blood from recent cases and from recovered cases of the 1916 poliomyelitis epidemic. Similar determinations of blood from normal adults who have not had poliomyelitis have not been carried out in sufficient numbers to warrant drawing any definite conclusions.

A similar constitutional deficiency of group A individuals has been reported in immunity to diphtheria. It was found that persons in group A did not have as high a content of diphtheria antitoxin in their circulating blood after recovery from that disease as was the case with other blood groups.

The differences in tuberculosis among white and negro people can best be explained on a genetic basis. Some attempt to explain differences in resistance to tuberculosis in whites and negroes by saying that exposure to infection in childhood is less frequent in the latter. Pathologic characteristics of the disease in adults do not support such statements nor do the many reports of tuberculin tests on negro children. Negro children are infected just as frequently as white. In the adult white person the reinfection type of disease is usually limited and there is no tendency to spread by way of the lymphatics. On the other hand in the negro the pathologic picture is usually that of widespread generalization of the infection, frequently in upper and lower lobes, with a tendency to spread by the lymphatics. These characteristic differences in the pathology of the disease in whites and negroes are undoubtedly evidence of a difference in immunologic response to infection. In the adult white person who comes in contact with infection in childhood, there develops an acquired resistance which tends to

localize and wall off his pulmonary disease. In the adult negro infected in childhood this response is either lacking or is of very short duration.

There is also reason to suppose that in the white race considerable variation exists among different individuals in their resistance to tuberculosis which may be the result of a genetic factor. Individuals vary in their native ability to form antibodies and to maintain them at a high level. In the experiments previously mentioned on highly resistant and highly susceptible strains of mice to specific infections a considerable degree of inbreeding was accomplished to bring about definite genetic differences. There are two reasons why inherited susceptibility to tuberculosis is not readily detected as in controlled experiments on animals. First, there is comparatively little inbreeding of pure strains of resistant or susceptible persons. Second, susceptibility is a recessive genetic character. On the other hand, because genetic resistance is a dominant character, it is of great importance in slowly elevating the average level of resistance of a race through the principle of survival of the fittest. There are many who claim that this factor is partly responsible for the steady decrease in mortality from tuberculosis.

TRI-STATE HOSPITAL

The meeting called to order on February 25, 1937, by Dr. L. H. Pirkle, Acting Chairman, with thirty-one members and one visitor present. Routine and new business was disposed of as usual.

Dr. Knighton, Jr. had arranged a very interesting and instructive scientific program on gastro-intestinal pathology with special reference to gastric hemorrhages.

The first case, by Dr. Knighton, Sr., was that of a cardiospasm with typical roentgen ray findings. Under treatment with anti-spasmotics the patient made a satisfactory recovery and the symptom of difficulty in swallowing disappeared.

The second case, by Dr. Atkin was that of a white male aged 34 years whose past history was negative. The patient went to work one morning feeling well and after doing some straining work felt faint and weak but recovered; later in the afternoon the same symptoms recurred and he vomited bright red blood, fainted and was brought to the Hospital. He had had no previous symptoms to point to gastrointestinal pathology. Physical examination was essentially negative except for shock and slight tenderness in epigastric region. He was given general routine care with intravenous fluids and later small feedings and alkaline powder. A roentgenogram showed a penetrating ulcer. The patient left Hospital on thirteenth day, taking nourishment by mouth and greatly improved.

The third case, by Dr. Wren, was that of a white female aged 33 years, a nurse by profession. She gave a past history of typhoid at the age of 7 years, malaria several times and mercury poisoning following treatment, pneumonia in 1917 and 1918, gastric hemorrhages in 1933 with closure of ulcer followed by a stormy recovery, positive wassermann and anti-luetic treatment; has a child 3 months old with a positive Wassermann. Present history: following the nursing of a case of influenza the patient became acutely ill with bleeding from the nose and ears, severe headache, chill and fever of 105 degrees. She entered the Hospital and diagnosis of pneumonia was made. Two days later she had gastric hemorrhages and two days later died. Autopsy findings reported briefly by Dr. Sam Kerlin: Linear scar where old ulcer excised, mucous membrane of the stomach and duodenum hyperemic with marked capillary hemorrhages. Left lobe of lung showed gray hepatization, heart anemic and muscles flabby, spleen slightly enlarged, liver normal, blood vessels to gastrointestinal tract engorged and dilated, aorta normal, no indications of lues from the autopsy findings.

The fourth case presented by Dr. Williams, was that of white male, aged 57 years, bachelor. On September 6, 1935 patient felt dizzy, had a massive gastric hemorrhage, fainted, had profuse sweating and severe shock; brought to Hospital, given alkaline powder with strict diet. He left the Hospital on September 17. Gastric analysis October 2 showed total acid 91, free HCl 60, lactic acid none. Roentgen ray negative for ulcer; put on frequent feedings and diet. On February 20, 1937, Dr. Knighton, Jr. saw the patient after he had passed several copious stools with dark blood present; patient fainted, was in shock and sent to Hospital; vomited large amount of blood, grew progressively worse and died two days later. Autopsy findings: Stomach normal with exception of hyperemia of mucosa walls, multiple petechial hemorrhages throughout the mucosa, and slight constriction at pylorus, no ulcer scar, blood vessels engorged, appendix normal, spleen soft and twice normal size, kidneys normal, pancreas normal with exception of being nodular. The liver was one half normal size, yellowish and granular, cut surface gave grating sensation. Conclusion: Previous hemorrhage undetermined. Present hemorrhage due to back pressure on vessels by cirrhosis of liver.

There followed a general discussion, including reporting of several other cases of gastric hemorrhage due to various causes, such as peptic ulcer, leukemia and focal infection.

After statistical review of work for January, the meeting adjourned.

D. B. Daniel, M. D., Sec.

THE SHREVEPORT EYE, EAR, NOSE AND THROAT SOCIETY

The Shreveport Eye, Ear, Nose and Throat Society met in regular session at the Charity Hospital, the evening of Monday, March 1, 1937 at 7:30 o'clock. The president, Dr. L. W. Gorton, presided. The following members were present: Drs. L. W. Gorton, T. D. Boaz, John T. Crebbin, Claude LaRue, W. L. Atkins, and J. A. Wilkinson.

Dr. H. G. F. Edwards was a guest of the club and presented three very interesting cases from the Tumor Ward of Charity Hospital. His first case was a white woman sixty years of age. Examination showed an enlargement and induration of the soft tissues over the right antrum. Biopsy from this area was positive for carcinoma. Roentgen ray showed considerable bony destruction, extending through the roof of the antrum into the orbit. Dr. Edwards is treating her with deep roentgen ray and plans later to use radium.

The second case presented by Dr. Edwards was a colored woman who had a marked protuberance over the right frontal sinus, which had caused marked protopsis of the right eye. The mass has enlarged rapidly and the eyeball in addition to displacement is completely destroyed as an organ of sight. On account of non-cooperation of the patient neither roentgen ray pictures nor biopsy could be obtained, consequently the diagnosis remains undetermined and no treatment has been given.

The third case presented by Dr. Edwards was a colored woman with a protruding mass of the central frontal region. Roentgen ray showed osteomyelitis with considerable bony destruction. The right eyeball was displaced downward and outward and there was considerable thickening and induration of the conjunctiva, this case though similar to the preceding one in many ways was thought to be of luetic origin. The fact of the slower development the osteomyelitis and the positive Kahn were the points given by Dr. Edwards which led him to the above diagnosis.

Dr. LaRue presented a young white woman who complained of painful eyelids. This condition had existed over a period of many months and the patient had consulted numerous physicians without relief. She is a stenographer and has had to give up her work on account of her eyes. There was nothing in the family or personal history which would account for her symptoms. Examination was negative in every respect. She wears glasses that have been accurately fitted under a cycloplegic which give her normal vision and her muscle balance is normal. No one was able to offer any definite opinion and we shall await with interest a later report from Dr. LaRue.

This was the regular time for election of officers, but on account of the small attendance, a motion was made by Dr. Boaz, seconded by Dr. Wilkinson, that the election be postponed until the next meeting.

There being no further business to come before the society, the meeting was adjourned until the first Monday in April.

J. A. Wilkinson, M. D., Sec.

MERCY HOSPITAL

The meeting was called to order by Chairman Dr. John Dicks and the mortality investigation was first taken up under which came two very interesting cases.

The first was one of rheumatic heart disease with auricular fibrillation and congestive heart failure. Patient had had a break in decompensation about six years previous to final admission during which there was generalized anasarca. Response to diuretics was good and he was compensated sufficiently to get about but never able to do manual work. Since this initial attack he has remained a chronic rheumatic heart case.

Three months ago there was another severe break in which he developed pulmonary edema and auricular fibrillation. At this time also the response to medication was good until his most recent and fatal attack. This last break, besides the above mentioned findings, was characterized by hiccoughs, severe chest pains and a marked jaundice. The chest pains were proven to be pulmonary infarcts and the jaundice was thought to be due to passive congestion of the liver with cirrhosis. At autopsy, numeorus soft stones were found in the gall gladder and one large stone in the common bile duct, which probably had to do with the jaundice. Thoracentesis was done on numerous occasions, the amounts varying from 700-1500 c.c.

Autopsy verified the diagnosis, most of the pathology of the heart being on the mitral valve and giving it a button-hole appearance.

The second case for discussion was that of an adult, 45 years old, who had come into the hospital with acute pain and rigidity in the upper and lower abdomen associated with nausea and vomiting. There was at first extreme tenderness in the upper right quadrant with pain radiating toward the shoulder, but later the pain and tenderness became localized in the lower right quadrant. Diagnosis was made of acute appendicitis and appendectomy was done. The diagnosis was proven at operation, but on second postoperative day the patient began to cough. So strenuous was the cough that the patient ruptured a varicose vein in the esophagus, causing him to vomit bright red blood repeatedly. This continued, and the patient gradually grew worse and died on the fifth postoperative day.

Partial autopsy revealed ruptured varicose veins

of the esophagus and cardia of the stomach. There was little cirrhosis of the liver, but sufficient adhesions around the liver to produce portal obstruction.

The meeting was climaxed by a very interesting talk and lantern slide demonstration by Dr. I. M. Gage of the Department of Surgery of Tulane University on "The Postoperative Care of Patients Based on Physiological Principles."

H. Ashton Thomas, M. D., Sec.

HOTEL DIEU

The regular monthly meeting of the Staff of Hotel Dieu was held in the Nurses' Lecture Room of Hotel Dieu on Monday, February 15, 1937 at 8:00 p. m. The meeting was called to order by the President, Dr. H. E. Bernadas, with the Secretary, Dr. J. A. LaNasa, at the desk.

REPORT OF A CASE OF POPLITEAL THROMBOSIS FOLLOWING LOBAR PNEUMONIA

Dr. Louis Levy, in presenting this case, said that the object of the report of blood clot in an artery following pneumonia is to add another case to the records, and to call attention to a condition that has been corrected in at least one case without the loss of limb.

The etiology of these cases has not been cleared up other than that the literature shows about three other cases which followed pneumonia. The diagnosis is easy so far as knowing that the circulation is cut off, but difficult, in localizing the clot if embolectomy is to be hoped for. The following signs and symptoms are noted: Severe pain followed by numbness in the affected foot and up to the middle third of the leg; a few minutes later the toes and leg are cold, pale, and anesthetic; no pulsation in the anterior or posterior tibial arteries; gangrene sets in rapidly and marks off at the end of the blood supply of the patulous part of the artery. In one case in which embolectomy was done, severe pain at Poupart's ligament showed that the clot must be in the femoral region, and embolectomy was successfully performed. When a blood clot occurs and gangrene asserts itself, there is but one procedure and that is amputation high enough to insure blood supply to the remaining part of the member.

The following case is interesting because of the rarity of this condition and the recovery of the patient, who had to submit to amputation after a severe case of pneumonia left him a poor risk as a surgical case. I also hope to add this case to the literature from which I am only able to find about three previous cases.

CASE REPORT

The case is that of L. F. M., a white male, 43 years old, whose occupation is shoe repairing helper. He is married and has two healthy children. Family history had no bearing on the present illness. He had been a cigarette smoker since the age of 16, smoking a pack and over daily. He had experienced smoker's cough for many years. He had been nervous for the past six years and had had financial worries which added to this condition.

I was first called to see the patient about December 20. He was then in the third day of what was determined to be lobar pneumonia. The patient was very ill and had a severe case of pneumonia necessitating the use of oxygen up to and after the crisis. The heart was sustained by use of digitalis and whiskey.

He was over the attack of pneumonia, when on January 14, I was hurriedly called and found him in severe shock with pain radiating from the toes to above the knee, foot blanched and cold, and no pulsation in pedal artery. An opiate was given for the pain, and opiates were necessary up to the time of amputation. The pain moderated as gangrene set in after the line of good blood supply was determined. Amputation was done at the junction of the middle and lower third of leg. The operative procedure followed under spinal anesthesia, 125 mg. of novocain being introduced between the third and fourth lumbar spaces. The anesthetic was given and followed through by Dr. Abraham Mattes. A classical circular amputation was performed at the middle and lower third of thigh. Duration of the operation was 20 minutes. There was a small loss of blood and little shock occurred. The patient had an uneventful recovery, but lost, through slough, a small part of the flap. The patient is now able to be about on crutches. He is cheerful, and anxious to resume work.

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STREPTOCOCCUS HEMOLYTICUS AND PNEUMOCOCCUS BLOOD STREAM INFECTION FOLLOWING MASTOIDECTOMY

Dr. J. B. Larose presented a patient 13 years of age, who had had a mastoid operation on right ear at Charity Hospital. In 1935 she had pyelitis, and during childhood gave a history of having had measles, varicella and meningitis at the age of 3, following a fall.

The patient, Miss L. W., aged about 28 years, was first seen on the afternoon of Sunday, March 29, 1936. At that time there was a slight discharge from the left ear with a rather marked narrowing of the auditory canal. Patient was restless with marked malaise. Temperature was

104.6° F. There was a rather severe tenderness over the mastoid tip and at the antrum. A diagnosis of acute mastoiditis was made.

The patient was immediately sent to the hospital via ambulance, where a rush blood count and roentgen ray of mastoids was taken. The blood count showed 17,750 polynuclears, 11 small lymphocytes and neutrophiles 88 per cent. There was a heavy trace of albumin in the urine with acetone and indican present, also sugar 1 per cent. Roentgen ray showed a slight cloudiness of the periantral cells, but no definite roentgen ray evidence of mastoid disease. Sedative ear drops were prescribed. In addition a saline purgative and continuous ice cap to mastoid region.

The following morning the temperature was 102.6° F. and the tenderness over the mastoid marked. It was decided to operate. Under a general anesthesia, the skin incision was made and the cortex of the mastoid exposed. This did not have the normal appearance, and, with the removal of only a small part of the cortex, pus was found in many coalescing cells. The antrum was located and probed. The cells were necrotic over the region of the lateral sinus. This was outlined and other cells extending very far posteriorly were exenterated of pus. In using the suction tip the sinus was opened and immediately a pressure pack had to be inserted. The large cell at the tip of the mastoid was cleaned out and an iodoform gauze pack was used to stop the hemorrhage. Three silkworm sutures were taken in the skin. The operation was practically completed before the sinus was opened.

On March 31, 1936, the blood culture was negative, but the blood count was down to 2,000 polyneuclears with 18 per cent neutrophiles. The patient spent a fair day, but on the following day had a severe chill with profuse diaphoresis, following which the temperature rose to 104.2° F. There was no bleeding from the mastoid. A culture taken during the operation showed: (1) Few pus cells; (2) pneumococci and streptococci. Her temperature did not return to normal and it was thought advisable to transfuse the patient, 250 c.c. citrated blood being given by indirect transfusion. She had another chill after transfusion, and the temperature rose again. At night the patient was very restless and talking at random. The cardiac condition was good, but patient's general condition was rather alarming. The patient vomited frequently during the next day.

On April 2, 1936, another transfusion of 125 c.c. blood was given by indirect transfusion. On the same date the blood culture was positive for pneumococci and Streptococcus hemolyticus. This put quite a grave aspect on the prognosis as can be appreciated. The patient's temperature continued very septic in type, ranging between 104.0° F. and 98.2° F. for the next few days. The pulse rate was rapid as a rule.

On April 3, 1936, a small portion of the iodoform pack was removed and some purulent and necrotic secretion was found in the wound. Subsequent transfusions of 5 c.c., 250 c.c., and 250 c.c. of blood were given on April 5, 6 and 8. The latter two were direct. A fragility test on April 6, 1936, showed initial hemolysis to begin at 36 per cent and complete hemolysis at past 26 per cent. It was very difficult to obtain compatible donors. A consultation was held with Drs. Nix, Boudreaux and Taquino on the advisability of re-opening the lateral sinus. There was some tenderness over the left external jugular, but no definite cording or hardness along the path of the vein.

On the morning of April 9, 1936, under general anesthesia a ligation and section of the left internal jugular vein was done by Drs. Nix and Boudreaux. After this the mastoid area was prepared.

The sutures were removed and the mastoid cavity again exposed. There had been some attempt at healing with granulation tissue, but there was also some necrotic tissue. This was all curetted out and the bony covering of the sinus approached. This covering was very gently removed for a distance of approximately three-quarters of an inch. This sinus wall showed direct evidence of disease, being yellow and thick. After having packed above and below with thin strips of gauze, a deliberate incision was made from both ends. There was no clot present, but there was no question about the presence of a marked infection. An iodoform pack was inserted over the incised sinus. The wound was left open and a mastoid dressing applied. The patient's condition was good all during the operation.

On April 9, 1936, she was given 2 c.c. pneumococcus antigen and 3 c.c. were given the following day. The patient's condition seemed to improve slowly for a while, but the temperature and pulse showed a very severe infection. On April 12, 1936, the temperature went up to 105.4° F. and she was restless. The pulse was fairly good, but still rapid, being 130 per minute. She was given two direct transfusions following the second operation, one of 150 c.c. on April 11, 1936, and another of 100 c.c on April 17.

Another unforseen and distressing complication began on April 7, 1936. The patient began suffering with pains in both thighs, more marked on the left. This was diagnosed as a phlebitis of the femoral veins as there was a rather marked tenderness along the course of these veins. This condition progressed and gave the patient quite a

bit of pain. It finally settled in the left hip joint and remained there. Roentgen rays on May 1 and 8 showed no bone or joint pathology.

The blood culture was positive for pneumococci and Streptococcus hemolyticus on April 2, 3 and 4. On April 5, the culture was negative but another taken on April 10 was again positive. On April 13 a spinal puncture was done. Clear in appearance, 4 white cells per c.mm., 1 polymorphonuclear and 3 lymphocytes. The globulin and colloidal gold were normal. Cultures taken on April 20 were found to be negative.

Beginning about April 21 the temperature ran a more steady course, but was still septic in type. However, her general condition improved and the temperature gradually declined to the normal. The mastoid wound was healing with granulations and the discharge from the ear ceased. The hip condition was still painful and patient was getting codeine sulphate gr. ½ for relief. Magnesium sulphate compresses were used continuously to the leg, and also sunlight treatments. She remained in the hospital till discharged May 28, 1936.

At home the mastoid wound was dressed every second or third day. The wound healed nicely. The leg condition bothered the patient until July 6, 1936, at which time full extension of the leg was possible and the patient resumed work.

DISCUSSION

Dr. G. Taquino: I think Dr. Larose presented the case very well. Cases of lateral sinus thrombosis have always been a problem to me. They are extremely difficult to handle at times. If we will consider the small veins that empty into the lateral sinus, we can readily see how an infection can come from the cellular tissue of the mastoid going through the small openings of the bony wall of the sinus and emptying into the lateral sinus producing an infection. We can also see how a thrombophlebitis of the veins, especially in the Streptococcus hemolyticus conditions, can go through the Haversian canals entering the dura and carry the infection by way of the dura through the sinus into the blood stream. Where there is a destruction of the red blood cells and reduction of hemoglobin in a Streptococcus hemolyticus, to me it is an indication for a transfusion. I believe that multiple small transfusions are more valuable, and if possible the use of a different donor each time is a very great benefit to the patient. In one case of Streptococcus hemolyticus twelve transfusions and four infusions were given. I have in mind a case which did not have a thrombosis of the lateral sinus but a thrombosis of the vessels going up into the Haversian canals into the dura and through the blood stream. I did a mastoid on that child and the child was given a blood transfusion and the temperature, after the transfusion, went to normal for a few days. She was eleven years old and developed a pelvic peritonitis form a mastoid infection. Pelvic infection in a child in whom the genital organs are undeveloped is probably one of the rarest things I know. In this particular case the patient died of pelvic peritonitis resulting from a mastoid. I might add that a large pelvic abscess had been drained. I do believe that multiple transfusions, proper care and watching the blood count and the lowering of hemoglobin is an index to what your patient is doing. Whenever there is a blood stream infection you have a fight on your hands. I have had exceptionally good luck. I have in mind another case in which the child developed an abscess following a lateral sinus thrombosis in the left pleural cavity which Dr. Nix opened and drained. She then developed an infection in the left ankle which had to be drained by through and through method. Then she developed an abscess of the left hip. The technic employed here was multiple transfusions, first 200-300 c. c. then 100-150 c.c and given frequently. In that way we were able to fight the infection and in this particular instance had a very happy recovery for the patient.

Dr. J. E. Isaacson: Dr. Larose is certainly to be congratulated on this case as well as Dr. Taquino. During the past five years I have been particularly interested in this type of infection and have gathered statistics from Charity Hospital as well as other hospitals and the mortality is extremely high, almost 100 per cent. About five years ago I happened to be a patient who was suddenly taken very ill, starting off with a nose irritation. I saw Dr. Homer Dupuy about six o'clock in the evening of that day at his office and did not remember anything for six weeks afterwards. Drs. Couret and Hauser made numerous examinations and found hemolytic streptococci present in repeated examinations. I was extremely ill for several months afterwards. I have since been called upon to give my blood in infections of this type for transfusions. As far as treatment is concerned some clinics definitely disapprove of transfusions but I believe they are of value although not used in my case. Other men use antitoxins in very large doses and I think that was what was used on me and I am convinced of their value, i. e. anti-streptococcal serums.

Dr. S. B. McNair: I had a case of hemolytic streptococcic infection which got well in spite of treatment. I was called to see this child about eight years of age who had a temperature 105°, and a hard chill. This was my first private mastoid case. I operated and found a thrombosis of the lateral sinus, so I ligated the jugular vein. Dr. Harris reported hemolytic streptococci. The medi-

cal man gave one indirect transfusion and in four or five days the child was normal, and went home in a week. Later he developed a mass in the mastoid region and I decided to cut it off. I did and the thing recurred twice. The child is still well.

Dr. G. Anderson: One week after Dr. Taquino operated I was able to see this case by a coincidence. At that time the blood stream culture had been negative for a few days and the mastoid wound was healing, but the patient was very seriously ill with a peritonitis which, I believe, was the cause of death.

I was very much interested in Dr. McNair's case with the mass presenting at the mastoid, most likely the decompressions which he performed, although unintentionally, helped the child a great deal.

I still favor the use of transfusions and believe that frequent small ones may be preferable to occasional large ones as there is some value from the tonic effect of new blood. Donors should be directly matched rather than selcted by groups. The normal adult blood probably carries a certain amount of natural immunity and as this may vary with the individual it might be well to use different donors if they are available.

J. A. La Nasa, M. D.,
Sec.-Treas.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

April 5	Board of Directors, Orleans Parish Medical Society, 8 p. m.
April 5	Pathologic Conference, Hotel Dieu, 8:15 p. m.
April 6	Eye, Ear, Nose and Throat Hospital Staff, 8 p. m.
April 7	Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
April 7	Mercy Hospital Staff, 8 p. m.
April 7	Hutchinson Memorial Clinic Staff, 8 p. m.
April 9	French Hospital Staff, 8 p. m.
April 12	ORLEANS PARISH MEDICAL SOCIETY, 8 p. m.
April 14	Touro Infirmary Staff, 8 p. m.
April 15	Eye, Ear, Nose and Throat Club, 8 p. m.
April 16	I. C. R. R. Hospital Staff, 12 Noon.
April 19	Hotel Dieu Staff, 8 p. m.
April 20	Charity Hospital Staff, 8 p. m.
April 21	Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
April 21	Charity Hospital Surgical Staff, 8 p. m.
April 26	Orleans Parish Medical Society. (Meeting dispensed with because of confliction with meeting of Louisiana State Medical Society.)
April 26	House of Delegates, Louisiana State Medical Society, Monroe, La.
April 27	Baptist Hospital Staff, 8 p. m.
April 27	Louisiana State Medical Society, Monroe, La.
April 28	Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
April 28	Louisiana State Medical Society, Monroe, La.

During the month of March only one regular scientific meeting was held. The regular meeting scheduled for March 8 was dispensed with because of confliction with the sessions of the New Orleans Graduate Medical Assembly. A special joint meeting of the Orleans Parish Medical Society with the New Orleans Graduate Medical Assembly was held Thursday, March 11 at the Hutchinson Memorial. There was a very large attendance at this meeting. The following program was presented:

Advances in Operative Treatment in Carcinoma of the Large Bowel. (Illustrated in Color Motion Pictures and Lantern Slides.)

By:.....Dr. Wm. W. Babcock of Philadelphia.....

Diseases of the Nervous System Producing Dysfunction of Other Organs and Dysfunction of Other Organs Producing or Simulating Diseases of the Nervous System.

By:.....Dr. Lewis J. Pollock of Chicago.

A special meeting of the Society was called for Thursday, March 4 to hear two visitors from the Mayo Clinic:

Prostatic Resection.

By:.....Dr. Gershom J. Thompson.

Recent Advances in Anesthesia.

By:.....Dr. E. B. Tuohy.

At the meeting of March 22, Sir Aldo Castellani, Count Chisimaio, and Inspector General of the Italian Army and Navy, gave an illustrated lecture on the "Medical Aspects of the Ethiopian Campaign."

The following Amendment to the By-Laws was presented to the Society at this meeting and will lay over until the next meeting for final action:

ARTICLE I SECTION 5
ASSOCIATE MEMBERS

It be amended to include physicians teaching on full time basis in medical schools whose salaries are $1200 a year or less, and physicians in their first year of private practice.

Dr. T. A. Watters spoke on the Principle of Comparison and led the discussion on College Mental Hygiene Problems and Their Relation to the

Development and Adjustment of Personality of the American Council of Guidance and Personnel Associations, which met here on February 17.

Dr. Arthur Vidrine has been appointed a National Regent of the International College of Surgeons, according to a cablegram received on February 17, by Dr. T. J. Dimitry, Regent for Louisiana, from Professor Arnold Jirasek, of Czechoslovakia.

Dr. I. M. Gage addressed the Southeastern Surgical Association in Atlanta.

Dr. Isidore Cohn addressed the Northeast Thirteen Counties Medical Society at their meeting held in Booneville, Mississippi, February 16, on The Differential Diagnosis and Surgical Indications When a Splenomegaly Exists.

Drs. Frederick L. Fenno and Wm. H. Gillentine attended the Dallas Southern Clinical Society which held sessions between March 15 and 18.

Dr. Robert H. Bayley and Dr. Marie Louise Pareti were elected to Active Membership.

Tuesday, March 30, was Doctors' Day, and the Woman's Auxiliary to the Orleans Parish Medical Society again sponsored a party for all doctors and their wives at the Tip Top Inn of the Roosevelt Hotel from 9 p. m. to 1 a. m. Tables were provided for bridge and refreshments were served throughout the evening. An excellent orchestra provided music for dancing.

TREASURER'S REPORT

ACTUAL BOOK BALANCE: 1/30/37:	$2,636.04
February Credits:	$1,740.14
TOTAL CREDITS:	$4,376.18
February expenditures:	$1,070.68
ACTUAL BOOK BALANCE: 2/27/37:	$3,305.50

LIBRARIAN'S REPORT

The Library has loaned to doctors 808 books and journals during February, or more than 1½ to each member of the Society. In addition, 751 items have been loaned to students for overnight use, making a total of 1,559. These figures do not include the great use of books and journals within the Reading Rooms.

During February, 66 volumes have been added to the Library. Of these 27 were received by binding, 20 by gift, 1 by purchase and 18 from the New Orleans Medical and Surgical Journal. Notation of new titles of recent date is given below.

On request of physicians, members of the staff have collected material on the following subjects during the month:

Lipiodol and vaccine treatment of chronic bronchitis.
The practitioner vs. the specialist.
Disorders of sleep.
Coley's toxin.
Subenon.
Etiology of contracture of the tendon.
Calcification of the mitral valve.
Myasthenia gravis.
Carcinoma of lung.
Myclosene.
History of gynecology.
Pneumonia in diabetes.
Diarrheas.
Endocrine factor in the etiology of purpura hemorrhagica.

NEW BOOKS—FEBRUARY

Hotel Dieu Staff—Collected Papers. 1936.
American Otological Society—Transactions. 1936.
North Carolina Medical Society—Transactions. 1921-22, 1934-25, 1927, 1929-35.
Practitioner's Library of Medicine and Surgery. v. 11. 1937.
McGregor, A. L.—Synopsis of Surgical Anatomy. 1934.
Bremer, J. L.—Textbook of Histology. 1936.
Whitnall, S. E.—Study of Anatomy. 1936.
Yearbook of General Medicine. 1936.
Homans, John—Textbook of Surgery. 1936.
Roe, J. H.—Principles of Chemistry. 1936.
International Medical Annual. 1936.
Jackson, Chevalier—Diseases of Food and Air Passages of Foreign Body Origin. 1936.
Jutte, M. E.—You Must Eat Meat. 1936.
Meakins, J. C.—Practice of Medicine. 1936.
Hess, A. C.—Collected Writings. 2v. 1936.
Moynihan, Sir B. G. A.—Truants. 1936.
Carter, J. B.—Fundamentals of Electrocardiography. 1937.
Ashman, Richard—Essentials of Electrocardiography. 1937.
Carman, W. B.—Digestion and Health. 1936.
Hinton, W. A.—Syphilis and Its Treatment. 1936.
Lecy, R. L. ed.—Diseases of the Coronary Arteries. 1936.

LOUISIANA STATE MEDICAL SOCIETY NEWS

SCIENTIFIC PROGRAM

The tentative program arranged for the meeting of the Louisiana State Medical Society at Monroe, April 26-28, 1937, is given below. Certain minor changes may have to be made in this program, but, for the most part, it will stand as outlined.

SECTION ON BACTERIOLOGY AND PATHOLOGY

Dr. E. von Haam, Chairman
New Orleans

1. The Present Day Conception of Agranulocytic Angina (Lantern Slides)
   Dr. H. J. Schattenberg, New Orleans.
   To open Discussion Dr. M. E. Cox, New Orleans.
2. Paratyphoid Bacilli in Cutaneous and Subcutaneous Lesions. A Report of Seven Cases
   Dr. George S. Fasting, New Orleans.
   To open discussion
   Dr. J. K. Howles, New Orleans.
3. Fatal Tularemia with Postmortem Examination (Lantern Slides)
   Dr. W. R. Mathews, Shreveport.
   To open discussion
   Dr. E. von Haam, New Orleans.

SECTION ON EYE, EAR, NOSE AND THROAT

Dr. L. W. Alexander, Chairman
New Orleans

1. Van-Lint Conjunctival Flap in Cataract Extraction (Moving Picture Demonstration) Dr. W. B. Clark and Dr. John W. Fish, New Orleans.
   To open discussion Dr. Olin Moss, Lake Charles.
   Followed by Dr. Noel T. Simmonds, Alexandria.
2. The Diagnosis and Treatment of Acute Mastoiditis (Lantern Slides)
   Dr. Charles L. Cox, New Orleans.
   To open discussion Dr. Ernest Smith, Minden
   Followed by Dr. L. W. Alexander, New Orleans.
3. The Relationship of the Specialist to the General Practitioner (Lantern Slides)
   Dr. John B. Gooch, New Orleans
   To open discussion
   Dr. E. L. Zander, New Orleans.
   Followed by Dr. L. A. Monte, New Orleans.
4. Surgical Intervention in Acute Laryngeal Obstruction Dr. C. B. Flinn, Monroe.
   To open discussion
   Dr. Francis E. LeJeune, New Orleans.
   Followed by Dr. L. L. Shlenker, Monroe.
5. Infections of the Middle Ear
   Dr. J. T. Crebbin, Shreveport.

SECTION ON GASTRO-ENTEROLOGY

Dr. J. E. Knighton, Jr., Chairman
Shreveport

1. Diverticulosis and Diverticulitis of the Intestinal Tract (Lantern Slides)
   Dr. T. P. Lloyd, Shreveport.
   To open discussion Dr. M. W. Hunter, Monroe.
2. Pellagra Secondary to Lesions of the Gastro-Intestinal Tract Dr. W. M. Scott, Shreveport.
   To open discussion
   Dr. D. N. Silverman, New Orleans.
   Followed by Dr. W. R. Mathews, Shreveport.

SECTION ON GENERAL SURGERY

Dr. John G. Snelling, Chairman
Monroe

1. Head Injuries Dr. C. P. Gray, Monroe.
   To open discussion
   Dr. Alton Ochsner, New Orleans.
2. Reconstructive Surgery as Allied with the Treatment of Cancer Dr. Neal Owens, New Orleans.
   To open discussion
   Dr. W. R. Mathews, Shreveport.
3. Non-Tuberculous Lung Abscess (Lantern Slides)
   Dr. J. D. Rives, New Orleans.
   To open discussion
   Dr. H. L. Kearney, New Orleans.
4. Delayed Operation for Acute Hematogenous Osteomyelitis
   Dr. Howard Mahorner, New Orleans.
   To open discussion Dr. J. Q. Graves, Monroe.
5. Air-way and Air-ways in Relation to General Anesthesia Dr. Ansel M. Caine, New Orleans.
   To open discussion
   Dr. Alton Ochsner, New Orleans
6. Roentgen Rays and Their Use in the Treatment of Skin Diseases
   Dr. M. T. Van Studdiford, New Orleans.
   To open discussion
   Dr. J. W. Tedder, New Orleans.
7. Acute Pancreatitis
   Dr. Warren H. Cole (Guest), Chicago, Ill.
   To open discussion
   Dr. Walter Moss, Lake Charles.

SECTION ON GYNECOLOGY AND OBSTETRICS

Dr. H. B. Alsobrook, Chairman
New Orleans

1. Pelvic Conditions Simulating Appendicitis
   Dr. Jean Paul Pratt (Guest), Detroit, Mich.
   To open discussion
   Dr. H. W. Kostmayer, New Orleans.
   Followed by Dr. Lucien LeDoux, New Orleans.
2. Evolution of Gynecology
   Dr. Wm. D. Phillips, New Orleans.
   To open discussion
   Dr. C. P. Gray, Sr., Monroe.
   Followed by Dr. T. Sellers, New Orleans.
3. Diagnosis, Indications and Technic of Vulvectomy (Lantern Slides)
   Dr. O. C. Rigby, Shreveport.
   To open discussion
   Dr. W. R. Mathews, Shreveport.

Followed by....Dr. Walter E. Levy, New Orleans.

4. Epidural and Sacral Anesthesia in Gynecology and Obstetrics.....Dr. Peter Graffagnino, New Orleans.

To open discussion.....Dr. C. B. Odom, New Orleans.

Followed by....Dr. H. Vernon Sims, New Orleans.

SECTION ON MEDICINE AND THERAPEUTICS
Dr. Robert Bernhard, Chairman
New Orleans

1. Cardiac Emergencies—Bedside Diagnosis and Treatment.....Dr. Ben R. Heninger, New Orleans.

To open discussion.....Dr. George W. Wright, Monroe.

2. Factors Delaying the Diagnosis of Pulmonary Tuberculosis (Lantern Slides)....Dr. Louis A. Monte and Dr. Oscar Blitz, New Orleans.

To open discussion.....Dr. Morell W. Miller, New Orleans.

3. The Cause of Dyspepsia at Various Ages (Lantern Slides).....Dr. Andrew B. Rivers, (Guest), Rochester, Minn.

To open discussion.....Dr. Allan Eustis, New Orleans.

4. The Value of Diuretics in Edema (Lantern Slides).....Dr. Randolph Lyons, New Orleans.

To open discussion.....Dr. O. W. Bethea, New Orleans.

5. Some Common Conditions Influencing the Heart.....Dr. Melville W. Hunter, Monroe.

To open discussion.....Dr. B. J. DeLaureal, New Orleans.

6. Treatment of Bronchial Asthma (Lantern Slides).....Dr. W. H. Browning, Shreveport.

To open discussion.....Dr. Ralph Riggs, Shreveport.

SECTION ON NERVOUS DISEASES
Dr. J. D. Young, Chairman
Shreveport

1. Eye Findings as an Aid in the Diagnosis and Localization of Brain Tumors.....Dr. L. W. Gorton, Shreveport.

To open discussion.....Dr. Theodore J. Dimitry, New Orleans.

2. Neurology as an Aid in Diagnosing and Localizing Brain Tumors.....Dr. L. Roland Young, Covington.

To open discussion.....Dr. D. H. Duncan, Shreveport.

3. Surgery in Brain Tumors.....Dr. Ernest L. Sachs (Guest), St. Louis, Mo.

To open discussion.....Dr. G. C. Anderson, New Orleans.

SECTION ON ORTHOPEDIC SURGERY
Dr. A. Scott Hamilton, Chairman
Monroe

1. Internal Fixation and Fractures of the Neck of the Femur.....Dr. Melvin S. Henderson, (Guest), Rochester, Minn.

To open discussion.....Dr. John T. O'Ferrall, New Orleans.

Followed by.....Dr. Frank Brostrom, New Orleans.

2. The Use of Lipiodol in Certain Orthopedic Conditions.....Dr. George C. Battalora, New Orleans.

To open discussion.....Dr. E. D. Fenner, New Orleans.

Followed by.....Dr. Chas. L. Farrington, New Orleans.

SECTION ON PEDIATRICS
Dr. Herman A. White, Chairman
Alexandria

1. Childhood Tuberculosis.....Dr. Cecil Lorio, Baton Rouge.

To open discussion.....Dr. E. A. Socola, New Orleans.

2. Congenital Anomalies of the Rectum as a Factor in Constipation (Lantern Slides).....Dr. C. H. Webb, Shreveport.

To open discussion.....Dr. Julian Graubarth, New Orleans.

3. Treatment of Septicemias in Children with Report of a Case.....Dr. Ralph Talbot, Monroe.

To open discussion.....Dr. C. M. Jarrell, Alexandria.

SECTION ON PUBLIC HEALTH AND SANITATION
Dr. William H. Perkins, Chairman
New Orleans

Opening Address: "Preventive Aspects of Medical Service Among the Italian Forces in the Ethiopian War".....Sir Aldo Castellani (Public invited).

Scientific Session

1. Modern Trends in Public Health Work in Louisiana.....Dr. W. K. Sharp, New Orleans.
2. Lympho-granuloma Inguinale.....Dr. R. D'Aunoy and Dr. E. von Haam, New Orleans.
3. A Practical Tuberculosis Case-finding Program. Dr. R. A. Brown, (Guest), Montgomery, Ala.

SECTION ON RADIOLOGY
Dr. L. W. Magruder, Chairman
New Orleans

1. Who Owns the Radiograph?.....Dr. Lester J. Williams, Baton Rouge.
2. Radiation Therapy in Benign Uterine Hemorrhage.....Dr. Harold G. F. Edwards, Shreveport.

To open discussion....Dr. A. G. McHenry, Monroe.
Followed by....Dr. Paul W. Winder, Shreveport.

3. Phyto-Bezoar of the Stomach Associated with Gastric Ulcer (Lantern Slides).....
.....Dr. C. P. Rutledge, Shreveport.
To open discussion.....
.....Dr. Leon J. Menville, New Orleans.

SECTION ON UROLOGY
Dr. U. S. Hargrove, Chairman
Baton Rouge

1. Treatment of Carcinoma of the Prostrate (Lantern Slides).....
.....Dr. Eugene B. Vickery, New Orleans.
To open discussion.....
.....Dr. W. A. Reed, New Orleans.
Followed by....Dr. U. S. Hargrove, Baton Rouge.
2. Some Urological Problems in General Practice (Lantern Slides).....Dr. H. W. E. Walther and Dr. R. M. Willoughby, New Orleans.
To open discussion.....
.....Dr. I. B. Rougon, Shreveport.
Followed by.....Dr. D. T. Milam, Monroe.

THE PRESIDENT

Hiram Watkins Kostmayer was born in New Orleans in 1883. His preliminary training was in the public schools in that city, after which he attended Tulane University, receiving the B. A. degree therefrom in 1904. After his M. D. degree from Tulane in 1909 he served two years as interne in Charity Hospital, New Orleans.

After his internship be became Instructor in Gynecology at Tulane and continued in this position through 1915. The next year he was appointed House Surgeon of Charity Hospital from which he resigned to take charge of The Illinois Central Hospital. Finding that this took too much time from his main work, he resigned to devote his entire efforts to gynecology, accepting the appointment as Professor of Gynecology in the Post Graduate School of Tulane, a position he still holds.

Three years ago he became Dean of this school and continues in that office. He is a member of the American College of Surgeons, The American Association of Obstetricians, Gynecologists, and Abdominal Surgeons, and is a Diplomat of the American Board of Obstetrics and Gynecology.

Dr. Kostmayer was President of the Orleans Parish Medical Society in 1934.

THE PRESIDENT ELECT

Dr. Charles Manly Horton was born in Lowndesville, South Carolina, on October 3, 1879. He graduated with the degree of A. B. from Furman University in 1898. For a period of eight years succeeding his graduation from college he was in the railroad business and had a responsible position for such a young man as a train inspector. The lure of medicine had been in his mind for

HIRAM W. KOSTMAYER, M. D.

years so that he entered Tulane University Medical School, to graduate in 1911. Succeeding his graduation he served two years as an interne at the Charity Hospital and then went to Franklin, Louisiana, where he has been engaged in general practice since that time. Dr. Horton has had many positions of responsibility, trust and honor. For twelve years he was coroner of St. Mary Parish and City Health Officer of Franklin. In his local Parish Society he has been president and he has been president also of his District Medical Society. In 1932 he was honored by the State Society by being elected second-vice president and last year he was made Chairman of the House of Delegates.

THE ANNUAL ORATOR

Dr. Morris Fishbein was born in St. Louis, July 22, 1889. He is editor of The Journal of the American Medical Association; editor of Hygeia, the Health Magazine; associate clinical professor of medicine, University of Chicago; lecturer on history of medicine, University of Illinois; member of the Council on Pharmacy and Chemistry, the Council on Physical Therapy, the Council on Scientific Assembly, and chairman of the Committee on Foods of the American Medical Association.

He is author with Dr. George H. Simmons of

MORRIS FISHBEIN, M. D.

"The Art and Practice of Medical Writing"; author with Dr. Oliver T. Osborne of the "'Handbook of Therapy". Editor of "Your Weight and How to Control It"; editor with Dr. William A. White of "Why Men Fail". He is also author of "The Medical Follies," "The New Medical Follies," "Shattering Health Superstitions," "The Human Body and Its Care," "An Hour on Health," "Doctors and Specialists" and "Fads and Quackery in Healing." He has made many significant contributions to medical and lay literature, his most recent articles appearing in the Saturday Evening Post. Dr. Fishbein is editor of the Bulletin of the Society of Medical History of Chicago. He is a member of the American Public Health Association, Chicago Pathological Society, Institute of Medicine, American Association for the Advancement of Science, and a Fellow of the American Medical Association. He is a member of the Standard Club, Tavern Club and the Quadrangle Club. Dr. Fishbein conducts a health column syndicated by NEA service in over two hundred newspapers.

Dr. Fishbein received his B. Sc. degree from the University of Chicago in 1910, and his M. D. degree from Rush Medical College in 1912. At the time of graduation, he received the Alumni Fellowship in Pathology and became associated with Drs. Ludvig Kektoen and E. R. LeCount, publishing several papers of a medical research character. He also served as house physician in the Durand Hospital of the McCormick Institute for Infectious Diseases, 1912-1913. In August, 1913, following the death of Dr. E. R. Hyde, he became assistant to Dr. George H. Simmons, editor of The Journal of the American Medical Association, which position he held up to 1924, when he was elected editor to succeed Doctor Simmons.

CONCORDIA-CATAHOULA BI-PARISH MEDICAL SOCIETY OFFICERS, 1937

President—Dr. H. H. Ratcliffe, Ferriday.
Vice-President—Dr. J. P. Durham, Jonesville.
Secretary-Treasurer—Dr. John Schreiber, Vidalia.
Delegate—Dr. H. H. Ratcliffe, Ferriday.

ST. MARY PARISH MEDICAL SOCIETY OFFICERS, 1937.

President—Dr. J. T. Prosser, Morgan City.
Secretary-Treasurer—Dr. Ford S. Williams, Franklin.
Delegate—Dr. Guy G. Aycock, Patterson.
Alternate—Dr. T. H. Gueymard, Morgan Cty.

ASCENSION PARISH MEDICAL SOCIETY OFFICERS, 1937

President—Dr. D. C. Brumfied, Darrow.
Vice-President—Dr. H. A. Folse, Donaldsonville.
Secretary-Treasurer—Dr. Myer Epstein, Gonzales.
Delegate—Dr. D. T. Martin, Donaldsonville.
Alternate—Dr. H. A. Folse, Donaldsonville.

WASHINGTON PARISH MEDICAL SOCIETY OFFICERS, 1937

President—Dr. J. S. Desporte, Bogalusa.
Vice-President—Dr. A. F. Adair, Bogalusa.
Secretary-Treasurer—Dr. F. A. Williams, Franklinton.
Delegate—Dr. A. W. Martin, Bogalusa.
Alternate—Dr. W. W. Fleming, Bogalusa.

TERREBONNE PARISH MEDICAL SOCIETY OFFICERS, 1937

President—Dr. R. W. Collins, Houma.
Vice-President—Dr. J. B. Duval, Houma.
Secretary-Treasurer—Dr. S. F. Landry, Houma.
Delegate—Dr. M. F. Houston, Houma.

RAPIDES PARISH MEDICAL SOCIETY OFFICERS, 1937

President—Dr. I. N. Adams, Pineville.
First Vice-President—Dr. A. J. Morat, Colfax.
Second Vice-President—Dr. O. B. Owens, Alexandria.
Secretary-Treasurer—Dr. M. B. Pearce, Alexandria.

CALCASIEU PARISH MEDICAL SOCIETY OFFICERS, 1937

President—Dr. T. C. Moody, Lake Charles.

Vice-President—Dr. Walter Moss, Lake Charles.

Secretary-Treasurer—Dr. Eleanor Cook, Lake Charles.

Delegates—Drs. Robert Howell and Walter Moss, Lake Charles.

EAST AND WEST FELICIANA BI-PARISH MEDICAL SOCIETY OFFICERS, 1937

President—Dr. S. L. Shaw, Clinton.

Vice-President—Dr. W. J. Roberts, Felixville.

Secretary-Treasurer—Dr. E. M. Toler, Clinton.

Delegate—Dr. T. H. Pargen, Jackson.

MOREHOUSE PARISH MEDICAL SOCIETY OFFICERS, 1937

President—Dr. W. W. Poimboeuf, Bastrop.

Vice-President—Dr. J. N. Jones, Bastrop.

Secretary-Treasurer—Dr. F. B. Ogden, Bastrop.

Delegate—Dr. W. A. Rodgers, Bastrop.

Alternate—Dr. M. W. Owens, Bonita.

SHREVEPORT MEDICAL SOCIETY OFFICERS, 1937

President—Dr. W. B. Heidorn, Shreveport.

First Vice-President—Dr. R. T. Lucas, Shreveport.

Second Vice-President—Dr. W. J. Sandidge, Shreveport.

Secretary—Dr. P. D. Abramson, Shreveport.

Treasurer—Dr. D. R. McIntyre, Shreveport.

Historian—Dr. J. M. Bodenheimer, Shreveport.

Delegates—Drs. J. T. Crebbin, W. S. Kerlin, R. T. Lucas, O. C. Rigby, C. P. Rutledge, J. G. Yearwood, all of Shreveport.

FOURTH DISTRICT MEDICAL SOCIETY

The meeting of the Fourth District Medical Society was held in the dining room of the Shreveport Charity Hospital on October 6, 1936. Throughout dinner, members and visitors were entertained by the Gilliam Negro Quintet, whose services were secured by Dr. Guy Caldwell.

The scientific program was presided over by the president, Dr. Wilkins McDade of Minden. Dr. H. W. Kostmayer, President of the Louisiana State Medical Society and a guest of the meeting, reported the progress made by the Lobby Committee in Baton Rouge in having certain laws, detrimental to organized medicine, killed in committee. He also called attention to the progress made in Maternal Welfare throughout the State of Louisiana.

Dr. J. P. Sanders of Caspiana presented a very interesting paper on impotence, outlining the different types and stressing the treatment of each type. Dr. J. R. Stamper opened the discussion and showed a motion picture illustrating a new suction type of treatment for undescended testicles. Dr. Robert A. Strong, Professor of Pediatrics at Tulane University and guest speaker at the meeting, presented an outline talk and moving picture of vomiting in infancy. The discussion was opened by Dr. R. T. Lucas of Shreveport. Dr. George Wolfe presented a case of Schuler-Christian's disease from the pediatric service of the Shreveport Charity Hospital.

Following the scientific program, officers were elected by acclamaton for the following year, 1937:

President—Dr. S. A. Tatum, Homer.

Vice-President—Dr. J. B. Hall, Benton.

Secretary-Treasurer—Dr. C. Raymond Mays, Shreveport.

T. M. Oxford, M. D., Sec.

FOURTH DISTRICT AND SHREVEPORT MEDICAL SOCIETY MEETING

The joint meeting of the Fourth District Medical Society and the Shreveport Medical Society was held in the assembly room of the Shreveport Charity Hospital, March 2, 1937. Fifty-one members and two guests were present. The meeting was called to order by Dr. W. B. Heidorn. The chair was then turned over to past president, Dr. Wilkins McDade of Minden, Louisiana, who presided. The guest speaker, Dr. Ambrose Storck, from the Department of Surgery, Tulane University, was introduced by Dr. Paul D. Abramson. Dr. Storck presented a detailed, instructive discussion of "Surgery of the Sympathetic Nervous System". He pointed out its application and limitations in various special fields of medicine and the technic of approach for section and injection of some of the more commonly accepted methods of approaching sympathetic branches. The paper was discussed by Drs. Paul D. Abramson and O. C. Rigby.

C. R. Mays, M. D., Sec.

TRI-PARISH MEDICAL SOCIETY MEETING

The regular meeting of the Tri-Parish Medical Society was held at Lake Providence on March 2, 1937. Those present included Drs. J. P. Davis, President, Lake Providence, W. H. Hamley, B. J. Aymond and G. S. Hopkins, Lake Providence, W. McG. Dollerhide, Daniel W. Kelly, E. D. Butler and Fritz A. LaCour of Oak Grove, B. L. Bailey of Epps, G. W. Gaines, E. O. Edgerton and H. S. Provine of Tallulah, Guy L. Odom of East Louisiana Hospital, Jackson, A. D. Tisdale and W. L. Smith of Monroe, William K. Evans of St. Joseph.

Dr. Guy L. Odom of East Louisiana Hospital at Jackson read a paper on "General Paralysis of the Insane and Treatment by means of Artificial Fever Therapy." This paper was discussed by Drs. Hamley, Evans, Gaines, Smith, Edgerton, Tisdale, Provine, Aymond, Hopkins and Odom.

Dr. A. D. Tisdale of Monroe read a paper on "Abdominal Conditions with Special Reference to Diagnosis." The paper was discussed by Drs. Smith, Hopkins, Bailey and Tisdale.

Dr. W. L. Smith of Monroe presented a paper, "Roentgen Ray Pictures and Discussion of Intra-abdominal Conditions," which was discussed by Drs. G. S. Hopkins and B. L. Bailey.

Dr. William K. Evans, Director of the Parish Health Unit or Tensas, domiciled at St. Joseph, invited the members to meet on the first Tuesday of April at Newellton, in Tensas Parish. The invitation was accepted by unanimous vote.

Drs. W. McG. Dollerhide and Fritz A. LaCour paid 1937 dues.

The question of an Auxiliary to the Tri-Parish Society was brought up and, on motion of Dr. Edgerton, Mrs. William H. Hamley was instructed to organize the parishes and establish an Auxiliary.

William H. Hamley, M. D., Sec.

THE SOUTHEASTERN SURGICAL CONGRESS

The eighth annual assembly of this organization was held in Charlotte, N. C., March 8-10. Some of the outstanding surgeons in the country were on the program. Dr. Mims Gage of New Orleans was one of those who spoke, his subject being "Surgical Treatment of Peptic Ulcer."

Our late and honored colleague, Dr. C. Jeff Miller, has had a Lectureship dedicated to his memory in view of his contributions to surgery, his public benefactions and his untiring work for and his interest in, the Southeastern Surgical Congress. The Jeff Miller Memorial Lecture this year was delivered by Dr. W. D. Haggard, former President of the American Medical Association.

INTERNATIONAL COLLEGE OF SURGEONS

The United States Chapter of the International College of Surgeons has changed the date of the meeting in New York City to June 1-2, 1937.

Assistant Surgeon Charles M. McGill has been relieved from duty, U. S. Quarantine Station, Boston, Mass., March 6, 1937, and is to proceed to U. S. Quarantine Station, New Orleans, (Algiers), La., for duty.

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, Epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the State, which contain the following summarized information: For the week ending February 20, there were reported to the State Board of Health, through the Bureau of Epidemiology, a very large number of cases of influenza, 375 being listed for the week; a considerable number of pneumonia cases, 77 being listed, were likewise reported. In addition to these two important diseases, there were reported 62 cases of syphilis, 28 of pulmonary tuberculosis, 16 each of gonorrhea and cancer, 15 of whooping cough and 13 of diphtheria. Of the other diseases, 5 cases of tularemia occurred in five different parishes; a case of poliomyelitis was discovered in Sabine Parish and 1 of septic sore throat in Claiborne Parish. During the week ending February 27, influenza still appeared in epidemic proportions, when 389 new cases were reported. Pneumonia was way up in the sky with 91 cases, and there was considerable increase in the number of patients first developing pulmonary tuberculosis with 53 names sent to the Bureau of Epidemiology. Other double figure diseases include 32 cases of syphilis, 14 of scarlet fever, 12 each of gonorrhea and diphtheria and 11 of cancer. Four cases of tularemia were reported this week. One case of poliomyelitis was reported from Orleans Parish, and two cases of epidemic cerebrospinal meningitis, 1 from Orleans and 1 from West Carroll Parish. For the week ending March 6, the influenza epidemic seemed to be waning when only 143 cases were listed. However, pneumonia increased to 105, while pulmonary tuberculosis fell to 30 reportable cases. There were also listed the following diseases in double figures: 35 cases of gonorrhea, 24 of syphilis, 23 of cancer, 14 of diphtheria and 11 of chickenpox. Of the unusual diseases, a case of smallpox was reported from Caddo Parish, and epidemic meningococcic meningitis originated in Orleans. One case of tularemia was reported in Sabine Parish. For the week ending March 13, the tenth week of the year, influenza jumped up again with a bang, with 366 cases listed. Pneumonia fell to 73 instances, but syphilis increased to 59. There were also listed 26 cases of pulmonary tuberculosis, 21 of gonorrhea, 13 of typhoid fever, 10 each of diphtheria and cancer. Caddo reported one case of tularemia and Orleans one case of epidemic cerebrospinal meningitis.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of Census, reports that for the week ending February 13, there were 172 deaths in the city of New Orleans, divided 106 white and 66 negro. There occurred 13 deaths in children under one year of age. For the next week, closing February 20, there were 20 more deaths than the previous week. Of these 192 deaths, 119 were white and 73 negro. The deaths of 12 infants under one year of age were reported. There was a slight decrease for the week ending February 27, 182 deaths being reported, of whom 127 came from the white and 55 from the negro population. Infant deaths increased to 19. For the last week for which figures are available, namely that of March 6, there was a

considerable drop in the total number of deaths, when 165 were reported, divided 114 white and 51 negro. There were 14 instances of death in infants under one year of age. So far these first nine weeks of the year, in spite of the severe influenza epidemic with its accompanying high morbidity, show 1,536 deaths reported in New Orleans, as contrasted with 1,631 for the period in 1936.

SOCIAL SECURITY BOARD APPROVES NEW LOUISIANA PUBLIC ASSISTANCE PLANS FOR AID TO NEEDY AGED, BLIND AND DEPENDENT CHILDREN

Approval of Louisiana's new plans for public assistance to the needy aged, the blind, and dependent children was announced by the Social Security Board today. These plans, which coordinate public-assistance activities under the recently created State Department of Public Welfare, supplant those already in operation under the Louisiana Emergency Relief Administration.

The new plans place public assistance on a permanent basis but involve no other major changes. The State's programs for aid to the needy aged and to dependent children, which have been in operation since June, 1936, will be continued. A plan for aid to the needy blind was approved by the Board in November, but up to the present quarter the State had not requested a Federal grant under it. The original plans were set up on a temporary basis pending the passage of further welfare legislation. Through action by the legislature and the ratification of a constitutional amendment at the general election in November, the present State Department of Public Welfare was created and made responsible for the three public-assistance programs, as well as for certain other welfare activities.

The new department now assumes the duties formerly carried on by the Emergency Relief Administration. In relation to public assistance it will supervise administration of the three programs by the parish departments of public welfare. The parishes, as well as the State, will participate in financing public assistance. For aid to the needy aged and needy blind the Federal Government contributes approximately one-half of the State's total expenditures, and for aid to dependent children, one-third.

Louisiana is aiding about 14,700 needy old people and 18,000 dependent children in 6,020 families in March, according to estimates based on reports to the Board since the State's plans became effective. Average payments to individuals for March are estimated at $12.33 for the aged and $7.81 for dependent children. According to estimates of State officials, 600 needy blind persons will be assisted with average individual payments of $15 a month.

MAY DAY—CHILD HEALTH DAY 1937

Saturday, May First

Suggestion for Observance

The Children's Bureau sponsors May Day—Child Health Day activities at the request of the State and Provincial Health Authorities of North America and in accordance with the Congressional Resolution of May 18, 1928, authorizing the President to proclaim May Day as Child Health Day.

Slogan: Health protection for every child.

Objective: To promote the extension of year-round child-health services in every community, including services for physically handicapped children.

Leadership: State May Day chairmen will be appointed by State health officers to plan the State Child Health Day program and to arrange for the cooperation of organizations concerned with child health.

State departments of education will be asked to cooperate by planning and directing school Child Health Day programs.

Program: For community groups—(1) an evaluation of child-health services in the community based on a survey of existing child-health conditions and organization to promote child health, (2) the launching of new local child-health projects, and (3) exhibits or programs celebrating gains made.

For children—as a climax for the year's health program—festivals, athletic contests, programs, exhibits celebrating children's growth, vigor, and safety from health hazards.

State and local news stories, radio talks, and speeches.

Requests for information on State programs or for further material should be sent to May Day chairmen in State health departments.

Katherine F. Lenroot, Chief.

WOMAN'S AUXILIARY

Louisiana State Medical Society

President—Mrs. James Byron Vaughan, Monroe.

President-Elect—Mrs. George D. Feldner, New Orleans.

First Vice-President—Mrs. F. G. Ellis, Shreveport.

Second Vice-President—Mrs. T. H. Watkins, Lake Charles.

Third Vice-President—Mrs. E. B. Middleton, Homer.

Fourth Vice-President—Mrs. R. R. Arceneaux, Welsh.

Recording Secretary—Mrs. C. Gremes Cole, New Orleans.

Corresponding Secretary—Mrs. Joseph P. Brown, Monroe.

Treasurer—Mrs. Courtland P. Gray, Monroe.

Parliamentarian—Mrs. R. T. Lucas, Shreveport.

The Annual Meeting Headquarters and Meetings of the Auxiliary to the Louisiana State Medical Society

VIRGINIA HOTEL

Registration Desk—Lobby, First Floor

Mrs. Joseph P. Brown General Chairman

Chairmen of Sub-Committees

Registration and Credentials	Mrs. A. G. McHenry
Badges and Printing	Mrs. A. L. Peters
Tickets	Mrs. J. Pracher
Program	Mrs. A. D. Tisdale
Information	Mrs. I. W. Wolff
Supplies	Mrs. C. H. Hill
Transportation	Mrs. C. U. Johnson
Publicity	Mrs. A. Scott Hamilton
Exhibits	Mrs. D. T. Milam
Luncheons	Mrs. R. W. O'Donnell
Pages	Daughters of Doctors
Flowers	Mrs. D. I. Hirsch
Boat Ride	Mrs. J. Q. Graves
Finance	Mrs. R. W. O'Donnell

Chairmen of Hospitality and Reception

Mrs. W. L. Bendel	Mrs. R. W. O'Donnell
Mrs. F. C. Bennett	Mrs. P. L. Perot
Mrs. J. P. Brown	Mrs. A. L. Peters
Mrs. E. G. Calvert	Mrs. J. Pracher
Mrs. Hanson Coon	Mrs. F. P. Rizzo
Mrs. J. Q. Graves	Mrs. A. Scott Hamilton
Mrs. C. P. Gray	Mrs. L. L. Shlenker
Mrs. A. B. Gregory	Mrs. John Snelling
Mrs. H. E. Guerriero	Mrs. A. D. Tisdale
Mrs. C. H. Hill	Mrs. J. B. Vaughan
Mrs. D. I. Hirsch	Mrs. J. E. Walsworth
Mrs. Wm. Guerriero	Mrs. Douglas Williams
Mrs. C. U. Johnson	Mrs. I. J. Wolff
Mrs. A. G. McHenry	Mrs. G. W. Wright
Mrs. M. A. McHenry	Mrs. E. R. Yancey
Mrs. C. L. Mengis	Mrs. J. H. Pankey
Mrs. D. T. Milam	Mrs. B. M. McKoin
Mrs. D. M. Moore	

TUESDAY, APRIL 27, 1937

10:30 a. m. Invocation—Rabbi Hirsch.
Pre-Convention Board Meeting, Virginia Hotel, Crystal Ball Room. Mrs. Frederick G. Ellis, Vice-President of the Auxiliary to the Louisiana Medical Society, presiding.

1:00 p. m. Auxiliary Luncheon at Virginia Hotel,

3:30 p. m. to 5:30 p. m. Boat Ride.

8:00 p. m. Open Meeting and President's Reception.

WEDNESDAY, APRIL 29, 1937

9:00 a. m. General Session of Auxiliary, Mrs. Frederick G. Ellis, Vice-President, presiding. Crystal Ball Room, Virginia Hotel.
Invocation: Rev. W. C. Scott.
Welcome Address: Mrs. C. P. Gray.
Response to Address of Welcome: Mrs. Robt. T. Lucas.
Memorial Service: Mrs. D. M. Moore.
Reading of minutes.
Reports: State Officers; State Committees; Parish Auxiliaries; Special Committees.
Reports of Woman's Auxiliary to American Medical Association.
Report of Woman's Auxiliary to Southern Medical Association.
Recommendations of Executive Board.
New Business.
Reports of Nominating Committee.
Election of Officers.
Introduction of New Officers.
Announcements by New President, Mrs. Geo. D. Feldner.
Adjournment.

1:00 p. m. Luncheon, Virginia Hotel Roof.

3:00 p. m. Post-Convention Board Meeting, Mrs. George D. Feldner, President of Auxiliary to Louisiana State Medical Society, presiding. Crystal Ball Room, Virginia Hotel.

"DOCTOR'S DAY" Programs

Orleans Parish: Cocktail party from 9 p. m. to 1 a. m. in the Tip Top Inn of the Roosevelt Hotel.
Refreshments, dancing, floor-show, bridge and novel features of acquainting guests with each other.
Radio talks and newspaper editorials.
Editorial in "The Orleans Parish Medical Society Bulletin."

Calcasieu Parish: Radio talk by a prominent lawyer, March 28.
Editorial in local paper.
Announcements from the pulpits by various ministers the Sunday preceding March 30.
Dinner-party on the night of March 30, at the Majestic Hotel at 7 p. m., for doctors and their wives of both the Calcasieu Parish and Jefferson Davis Parish auxiliaries.
Unmarried doctors and women doctors to be guests of the two parish auxiliaries.

Ouachita Parish: Editorial in newspapers honoring doctors.
Open house for doctors and their wives in the evening of March 30. Boutonnieres and flowers to be sent to each doctor on the morning of the 30.

Claiborne Parish: Preachers of the various churches will be asked to give special talk as a tribute. Local papers will also carry an editorial. The public will be asked either to send a card or flowers to their physician on "Doctor's Day."

Jefferson Davis Parish: Will join Calcasieu by

giving a banquet to the doctors of the two parishes. Will also have editoials in papers.

Caddo Parish: Plans to have an expression from the people of the city, not from the members of the auxiliary, by means of editorials in the local papers—The Shreveport Times and The Shreveport Journal. A radio talk on Medical Science will be given by a citizen of the city. The inactive physicians will be remembered by visits and flowers on March 30.

JEFFERSON DAVIS PARISH

The Jefferson Davis Parish Medical Auxiliary met in March at the home of Mrs. L. E. Shirley in Jennings.

The following officers were elected:

President—Mrs. G. W. Remage, Jennings.

Vice-President—Mrs. John M. Whitney, Jennings.

Secretary—Mrs. R. R. Arceneaux, Welsh.

Treasurer—Mrs. J. G. McClure, Welsh.

Mrs. Claude A. Martin,
Publicity Chairman.

CADDO PARISH

The medical auxiliary to the Shreveport Medical Society met in the home of Mrs. W. L. Howell on Wednesday, the tenth. Our business meeting, presided over by the President, Mrs. R. T. Lucas, was unusually interesting, as a great portion was given over to discussion of the annual state meeting to be held next month in Monroe.

The guest speaker for the afternoon was Dr. J. M. Gorton who gave a most interesting and enlightening talk on syphilis.

Mrs. W. R. Mathews,
Publicity Chairman.

ORLEANS PARISH

The Woman's Auxiliary to the Orleans Parish Medical Society had the pleasure of entertaining the wives of the visiting doctors to the New Orleans Graduate Medical Assembly at their March meeting, as well as the wives of army and navy doctors living in New Orleans.

Mrs. George D. Feldner, local and State "Doctor's Day" Chairman, gave an interesting report the auxiliaries throughout the state in celebration on the various types of parties being planned by of this very momentous occasion and reported that from all indications, the local party is going to go over in a big way.

Mrs. Edgar Burns,
Publicity Chairman.

IMPORTANT!!!

May I remind Auxiliary Presidents and Committee Chairmen please to comply with Mrs. Vaughan's request to get your reports in to her by April 6? This is most important.

Judging from whispers drifting down to us from Monroe, this is going to be a great meeting in April, so plan to be there, as many of you as can. You will not want to leave the hospitality and sincere warmth of friendliness that awaits you. So do lets show our appreciation to the hostess auxiliary by having as large an attendance as we can muster.

Mrs. George D. Feldner,
Chairman Press and Publicity.

BOOK REVIEWS

Urology: By Edward L. Keyes, Ph. D., F. A. C. S., F. R. C. S. (Hon. England), and Russell S. Ferguson, A. B., M. D. Sixth edition. New York, D. Appleton-Century Co., Inc., 1936. pp. 707. Price $10.00.

The sixth edition of Urology by Edward L. Keyes and Russell S. Ferguson is a revision of Urology previously written by Edward L. Keyes. Although the general scheme of the previous edition has been followed, new chapters have been added and all of the old ones have been rewritten. Certain chapters, including the anatomy and embryology, not relating to practice, have been omitted.

Changing concepts, particularly relative to intravenous urography, prostatic resection, calculogenesis, tuberculosis, tumor and irradiation therapy are attractive additions to the new volume. Probably the most impressive of the new chapters are those dealing with neoplastic diseases; they include biopsy and irradiations and cover the kidney, bladder, prostate, urethra, seminal vesicle, spermatic cord, penis, scrotum and testis. A short summary of the indications for and a description of operative procedures is given. The edition contains urologic principles and advice germinating from an experience antedating 1900. The elementary principles are particularly beneficial, easy to comprehend and undoubtedly useful to all contemplating the use of urologic instruments.

Discussions are limited and are notably absent on mooted points. References are not given and for the reason that they are impractical in a one-volume text.

The chapters are written in a concise, clear, flowing style, popular with the average reader.

Urology is a practical volume and of value to the student and general practitioner. It may be used as a reference inasmuch as the opinions of Keyes and Ferguson are highly respected.

JOHN G. MENVILLE, M. D.

A Diabetic Manual for Practitioners and Patients: By Edward L. Bortz, A. B., M. D., F. A. C. P., with a foreword by George Morris Piersol, B. S., M D., F. A. C. P. Philadelphia, F. A. Davis Co., 1936. pp. 217. Price $5.00.

In the author's preface is found the statement that "The present volume has been written with the hope that it may prove useful to the physician, the student, and, most of all, to the patient". Because of this fundamental idea, the Manual suffers from the common defect of simplicity for the patient at the expense of detail for the physician. That the appeal is largely to the patient, is indicated by the glossary in the beginning of the book.

The literature on diabetes has been well covered and reduced to simple statements with appropriate chapters on Pregnancy and Diabetes, Diabetes in Children, Dental Care, Care of the Feet, Complications, and Surgery in Diabetes. There are many charts of food values and equivalents. The customary discussions on the treatment of the diabetic are adequate. Diet therapy and menu planning are treated at some length. The use of protamine insulin is mentioned briefly.

For the intelligent diabetic willing to exert a fair amount of cerebration to understand his illness, this manual is to be recommended.

SYDNEY JACOBS, M. D.

Microbiology and Pathology for Nurses: By Charles F. Carter, B. S., M. D. St. Louis, C. V. Mosby Co., 1936. pp. 682. Price $3.00.

This text has been prepared in two parts, microbiology and pathology and is intended primarily for teaching purposes in nurses' training schools. The subject matter is clearly presented and practical. Highly theoretical and technical material has been omitted. The book has been prepared to follow more or less closely the outline of the Committee on Education of the Natinal League of Nursing Education. An important feature is the inclusion of two rather complete chapters on disinfection and sterilization. The means by which this is accomplished is explained in a thorough manner. Throughout the text the author attempts to explain the spread of disease and further in what way this may be prevented. From the standpoint of a student nurse such a point cannot be too much emphasized. In the part on pathology the author attempts to draw a mental picture of the pathological changes within the body responsible for disease and further correlating these with the clinical findings, or, as Dr. Carter states, "symptoms are but the outward expressions of internal derangements". The subject matter in this book is not presented in a manner which is too technical but in such a simplified way that it may readily be understood by the student nurse. The price of this text is unusually reasonable, especially since it is published in two parts, microbiology and pathology.

H. J. SCHATTENBERG, M. D.

The Art of Ministering to the Sick: By Richard C. Cabot, M. D., and Russell L. Dicks, B. D., New York, The Macmillan Company, 1936. pp. 384. Price $3.00.

This book is addressed primarily to ministers although it should be of interest to all who care for the sick. The authors are both excellently well qualified to write upon this subject. That a minister can be a real help to the patient as well as his physician has been only too often demonstrated in the reviewer's experience, but the minister must have some clinical knowledge of illness and the psychology of the sick in order that the alliance between doctor and minister should prove of the greatest help to the sick. Furthermore the doctor should realize that the sick often require more than physical aid, in fact spiritual help may mean the turning point. All ministers who have much to do with the sick should read this book as they will find much information in it which should be of help to them in ministering to the sick.

RANDOLPH LYONS, M. D.

Oral Diagnosis and Treatment Planning: By Kurt H. Thoma, D. M. D., Philadelphia, W. B. Saunders Co. 1936. pp. 379-533. Price $6.00

The outstanding value of this thorough, well illustrated work is the method the author has used to attack his subject. It is divided into three parts—1. "The Theory of Diagnosis and Treatment Planning", 2. "Methods of Examination", 3. "Clinical Diagnosis of Dental and Oral Diseases."

Under part one "The Theory of Diagnosis and Treatment" the author discusses examination, diagnosis, prognosis, planning of treatment and final examination.

In part two "Methods of Examination" the author discusses history of patient, physical examination, laboratory tests, and roentgen ray diagnosis and procedures.

Part three "Clinical Diagnosis of Dental and Oral Diseases" comprises three-fourths of the book and contains all of the colored illustrations. The author excels in this section of his work, in the reviewer's opinion, in his method of presentation. First, he has classified various diseases and conditions according to their anatomic relation; then, he has them classified by their most evident symptoms. As an example, one chapter classified according to anatomic relation is titled "Diagnosis

of Malformations of the Head and Their Relation to the Face and Jaws", another classified according to most evident symptoms is titled "Diagnosis of Localized Swellings of Oral Muscosa and Lips", which is further divided into such subtopics as "Swellings in Submaxillary Region", "Swelling in Submental Regions", "Inequality of the Two Sides of the Face".

This book should prove to be a valuable reference for the physician as well as the dentist and a most effective, thorough text book for the dental student.

F. Harold Wirth, D. D. S.

Collected Writings: By Alfred F. Hess, Springfield, Illinois. Charles C. Thomas, 1936. Price, $15.00.

Very occasionally are there instances in which a man carries along a large private practice and at the same time is a genuine contributor to the branch of medicine in which he specializes. Alfred Fabian Hess was a perfect example of such a man. During the last twenty-five years of his life, which ended suddenly on the evening of December 5, 1933, he published two hundred and thirty-seven papers, everyone of which was a real contribution and served to advance our knowledge of pediatrics. So important were these papers, which were widely scattered in different medical journals over the world, that none other than Dr. William H. Welch suggested that they be collected and published in the two volumes comprising this set. Even though many of his problems had not reached final solution in the articles, much of the material represented original work and observation, and, according to all who have been familiar with these writings previously, were definitely accepted as milestones in the development of the subjects under consideration. Historically, therefore, they will always be valuable sources of information, because so many of them were investigations which opened up leads for others to follow.

Few men were better known or more highly regarded than Alfred Hess. He was perhaps best known for his work on rickets, although he had an enthusiastic interest in all other nutritional diseases. It is generally known that three hundred years ago, Glisson appreciated the value of sunshine, but it remained for Alfred Hess to demonstrate just how this sunshine was beneficial. If he had done nothing else, his name would have endured for all time as the individual responsible for the many substances available at the present time to prevent and cure rickets.

Volume one of this set opens up with a Foreword by his wife, Sara Straus Hess, who acknowledges the help and inscription of Dr. William H. Welch, Abraham Flexner, Dr. Edwards A. Park and Mr. Norman Hapgood. This is followed by a most interesting biography of Dr. Hess written by Abraham Flexner. It traces Dr. Hess' life and brings to light many things about him which, prior to his death, were not known. His methods of work and scientific achievement, as outlined by Mr. Flexner, are inspiring. Quite apart from his interesting investigations, he was one of the first in the United States to realize that no provision had been made for the infant in the tuberculosis program, and his papers and agitation resulted in the founding of the first sanatorium for infants infected with tuberculosis as well as those exposed.

It is indeed most fortunate that the epoch-making contributions of this man have been made available in these volumes, and all who desire a well rounded store of information, especially on nutritional diseases, should read these Collected Writings.

Robert A. Strong, M. D.

A Dissertation on the Sensible and Irritable Parts of Animals: By Albrecht vonHaller; with an introduction by Owsei Temkin. Baltimore, The Johns Hopkins Press. 1936. pp. 49. Price $1.00.

This is a reprint of an anonymous English edition of two papers read by Haller before the Royal Society of Sciences of Goettingen on April 22 and May 6, 1752. In these essays, as a result of numerous experiments by himself and his pupils, particularly Johann Georg Zimmermann, Haller makes the clear distinction between sensibility and irritability. Sensibility according to Haller is a property only of those parts supplied by nerves while irritability is an attribute of muscular fibers. Subsequent work has necessitated revision of Haller's original views, but, as Owsei Temkin points out in his able introduction to the present volume, irritability or excitability have remained fundamental physiological conceptions, although their nature is still discussed as it was in Haller's time. Aside from its stimulating effect on the physiologists of that epoch, it is an outstanding document of indefatigable experimentation and of clear reasoning, and as such, is classic.

The excellent format and low price of the present reprint should prove most attractive to those interested in medical history.

H. S. Mayerson, M. D.

The Surgical Technic of Abdominal Operations: By Julius L. Spivack, M. D., Chicago, S. B. DeBour, 1936. pp. 718, 677 illus. Price, $10.00.

The primary attributes of a competent surgeon are twofold: first, that innate ability of performing the operation most suited to his patient, surgical judgment; second, an adequate understanding of the technical details of the operative procedure. The former is an abstract quality not gained from texts, the latter a more concrete one that can be transcribed into pictures and words.

Dr. Spivack's book treats solely of the latter. He has presented to the medical world a textbook on abdominal operative procedures. Realizing that word descriptions are at best vague, he has used an important adjunct in the form of numerous illustrations, adequately drawn and clearly demonstrating technical points. These supplement accurate and concise word descriptions wherein a complete procedure is condensed and presented in a minimum amount of space.

His organization of material is based on a logical sequence. The opening chapters deal with fundamentals such as incisions, sutures, and knot tying. Each technical procedure is preceded by a review of the surgical anatomy illustrated by diagrammatic sketches. Anatomical considerations are stressed as the basis of the work. Individual operations are described in sequence, the simpler procedures first with the more complicated ones following. The actual technic is detailed in numbered stages, the diction clear and concise, with important details emphasized in bold face type.

The author has endeavored to give due credit for any new procedure to the more original author or authors, and many chapters contain brief historical resumés. The more recent procedures are emphasized, but when older ones of merit are used they are likewise included. At the end of each chapter is a complete bibliography which is so necessary in surgical literature.

The volume is sturdily bound, of convenient size, and printed in a large and easily readable type. It has value as a reference manual for students of operative surgery and for practicing surgeons. Inclusion of an index would add appreciably to the usefulness of the work.

It is a book not to be relegated to the library shelf, but should occupy a prominent position on every surgeon's desk. The reviewers feel that it is by far the outstanding book of its type of the day. Miss Barthenbach, the artist, deserves a word of praise for having materially added to the appeal of the book.

J. Leonard Dixon M. D.
H. H. Hardy, M. D.

Arthritis and Rheumatic Disease: By Maurice F. Lautman, M. D.; with a foreword by Morris Fishbein, M. D. New York, McGraw-Hill Book Co., Inc. 1936. pp.177. Price $2.00.

This treatise, while written primarily for the purpose of disseminating appropriate information to arthritic patients, or the public who may be interested in the subject, contains most valuable information for the physicians who are students of arthritis. Obviously the writer omitted the complicated discussion concerning the pathology and many factors concerning the etiology of arthritis which has attracted the attention of so many students during the past years. The author should be complimented on his omission of the usual complicated classification of arthritis.

This therefore represents a most intelligent review by one fully competent to speak on the subject and is enlightening to physicians and students desiring some practical and plain facts in reference to the "arthritic problem". It is very unique in its composition and is rather refreshing to one who may be accustomed to reviewing deep scientific physiochemical propositions and other allied scientific facts which have been so conspicuous in the recent literature emanating from clinics and sources where this work has been of such paramount thought during the past several years. In other words it represents a summary, which almost anyone can understand, of the present day conception, treatment and handling of the "arthritic problem".

P. T. Talbot, M. D.

Research in Dementia Precox: By Nolan D. C. Lewis, M. D. New York City, The National Committee for Mental Hygiene. 1936. pp. 320. Price $1.50.

It is very noteworthy that this book is sponsored by a group of laymen with a desire to make a contribution that might advance the understanding of dementia precox and possibly lead to curative measures. In 1934 the Scottish Rite Masons of the Northern Jurisdiction elected to support a research into the cause of dementia precox, and at the suggestion of the National Committee for Mental Hygiene. Dr. Nolan D. C. Lewis was commissioned to undertake the work.

This monograph presents briefly the various aspects of phychiatric investigation in dementia precox, and the problems of research now being carried on to unravel this complex problem is outlined. One of the principal values of this book for anyone wishing to know what has been done in this field is the very complete bibliography. Chapters on the general symptomatology, differential diagnosis, are well written and clearly present the dementia precox syndrome.

This book will be stimulating to anyone who reads it, but it will prove invaluable to those interested in research in dementia precox.

C. S. Holbrook, M. D.

Textbook of Obstetrics: By Edward A. Schumann, A. B., M. D., F. A. C. S. Philadelphia, W. B. Saunders, 1936. pp. 780. Price $6.50.

This is a concise and clearly written textbook, which covers the subject of obstetrics in a most pleasing and acceptable manner. For the sake of brevity, historical data have been eliminated, and the usual verbose discussions of controversial topics have been condensed to the utmost. The author writes in a clear and convincing manner, and one can easily see that he knows whereof he speaks.

The methods of treatment of various obstetrical conditions, as set forth in this volume, are essentially conservative, though the various radical indications are correctly placed. Hence this book is a safe and sane guide to the proper management of obstetrical patients, and is thoroughly up to date in every way.

The illustrations are adequate in amount and quality, and the general make-up leaves nothing to be desired. It is cheerfully recommended as a most excellent, up to the minute presentation of the subject of obstetrics.

E. L. KING, M. D.

Syphilis and Its Treatment: By William A. Hinton, M. D. New York, The Macmillan Co., 1936. pp. 304. Price $3.50.

Although this is not a voluminous text and is void of photographs and drawings and contains scant bibliography, the author is emphatic in his remarks regarding diagnosis and treatment.

His expressions regarding infectiousness of the disease during its different stages and periods of treatment are very forcibly put.

This is a most useful text for the medical student and general practitioner.

MONROE WOLF, M. D.

The Study of Anatomy: By S. E. Whitnall, M. A., M. D., B. Ch. (Oxon.), M. R. C. S., L. R. C. P., F. R. S. (Canada) 3rd ed., revised and enlarged. Baltimore, William Wood and Company. 1936. pp. 113. Price $1.75.

This little volume, which can be read easily over a weekend, is one which should be perused by every medical student early in his first year or with profit even during the summer before beginning medicine. Although the general tone is unnecessarily paternalistic, the advice given is just what every anatomy professor tries to have followed by his students. Gross anatomy is dealt with primarily, although the other branches are correlated with the clinical subjects too. The importance and desirability of students always trying to learn anatomy in relation to its clinical application is emphasized on almost every page; likewise the necessity of teachers of anatomy being men of broad clinical interests. The chapter, "Practical Methods of Study," should be very stimulating to demonstrators and senior students as well as beginners. If his conclusion that "main facts are more important than details" was generally acknowledged by teachers, much of the profitless time spent in anatomy would be used to advantage. He desires that we avoid the modern underemphasis on surface and cross-sectional anatomy. The chapter with appendix concerning collateral reading is admirable, but, at least in the usual American courses of anatomy, there is very little time for the student to browse outside of his assigned text. The reviewer is one of the many who do not agree with his proposal of abolishing all lectures. Certainly everyone does accept wholeheartedly his admonitions with regard to examinations; if students would read this chapter alone and apply its precepts to their work, the book would have served a tremendously useful purpose. The discussion of nomenclature should go far in removing the confusion with which this bugbear confronts the student.

JOSEPH THOMAS ROBERTS, M. D.

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Columbia University Press, New York: Social Case Recording by Gordon Hamilton. The Social Component in Medical Care by Janet Thornton in collaboration with Marjorie Strauss Knauth.

Paul B. Hoeber, Inc., New York: Light Therapy by Frank Hammond Krusen, M. D., Second Edition, Revised and Enlarged.

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J. B. Lippincott Company, Philadelphia: International Clinics, Volume I, Forty-Seventh Series, 1937. Edited by Louis Hamman, M. D.

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The C. V. Mosby Company, St. Louis: Operative Surgery, Volumes I and II, Fourth Edition, by J. Shelton Horsley, M. D., LL. D., F. A. C .S., and Isaac A. Bigger, M. D.

W. B. Saunders Company, Philadelphia: Preoperative and Postoperative Treatment by Robert L. Mason, A. B., M. D., F. A. C. S. The Diseases of Infants and Children, Second Edition, by J. P. Crozer Griffith, M. D., Ph. D., and A. Graeme Mitchell, M. D.

Charles C. Thomas, Springfield: Clinical Roentgenology of the Cardiovascular System by Hugo Roesler, M. D.

University of Pennsylvania Press, Philadelphia: The Development of Modern Medicine by Richard Harrison Shryock.

B. Westermann Company, Inc., New York: The Cure of High Blood Pressure by Respiratory Exercises by Lothar Gottlieb Tirala, M. D., Ph. D.

William Wood and Company, Baltimore: Textbook of Pathology by Sir Robert Muir, M. A., M. D., Sc. D., LL. D., F. R. S.